

CHAPTER 12

AMPHIBIOUS DUTIES

A special amphibious signal system for ship-to-shore movements is used when amphibious landings are conducted. Panels, shapes, flags, and lights are used for this system. Do not confuse these signals with any of those in ATP 1, volume II, or the *International Code of Signals*. Review the amphibious signal system instructions in NWP 22-3, *Ship-to-Shore Movement*, for complete details on all amphibious signals and instructions. This chapter covers just the basics that you, as a Signalman, need to know for an amphibious landing.

AMPHIBIOUS OPERATIONS

LEARNING OBJECTIVE: Explain the general concept of an amphibious operation ship-to-shore movement.

The ship-to-shore movement is the portion of the assault phase of an amphibious operation that includes the deployment of the landing forces from assault shipping to designated areas. Its object is to ensure the landing of troops, equipment, and supplies at prescribed times and places and in the formation required by the landing force scheme of maneuver for operation ashore. Ship-to-shore movement may be executed by water, air, or a combination of both. It commences at the order of the Commander, Amphibious Task Force (CATF), and concludes when the unloading of all assault shipping is completed.

AMPHIBIOUS SHIPS AND CRAFTS

LEARNING OBJECTIVES: Identify and explain the duties of ships and landing crafts involved in an amphibious operation.

The following ships and landing craft are vital to carrying out the operation of an amphibious assault.

COMMAND SHIP (LCC)

The amphibious command ship serves as a command ship for the amphibious task force (ATF), landing force, and tactical air commanders during an

amphibious assault. It also provides facilities for a joint communications center, supporting arms coordinating center, and central control of both the waterborne and helicopterborne ship-to-shore movement. The LCC may also provide facilities for the task force medical regulating center, but has limited medical facilities and is unsuitable as a major casualty receiving and treatment station.

GENERAL-PURPOSE ASSAULT SHIP (LHA)

The LHA combines many of the operational capabilities of other amphibious ships. It has helicopter operating facilities greater than those of an assault ship (LPH), and has well deck capacity twice the size of a transport dock (LPD). The LHA is also capable of carrying the landing craft, air cushion (LCAC) in the well deck. The LHA also provides facilities for Navy and Marine command and control, including a helicopter direction center and a medical regulating control officer. When augmented with appropriate personnel, LHAs serve as primary casualty receiving and treatment ships and provide triage functions and early definitive medical and surgical care for combat casualties.

MULTIPURPOSE ASSAULT SHIP (LHD)

The LHD is the largest class amphibious ship in service. It has improved capabilities over the LHA, in particular; the LHD is able to operate conventional landing craft, LCAC, fixed-wing tilt-rotor aircraft, and helicopters.

TRANSPORT DOCK (LPD)

The LPD transports and lands troops and their equipment and supplies by means of landing craft, amphibious vehicles, and helicopter. An LPD can function as a primary control ship (PCS) for waterborne crafts, but it has limited boat haven, helicopter storage, and control facilities. Some ships of this type are configured with Navy and Marine command and control facilities. The LPD has less extensive medical facilities than the LPH/LHA, but

would be suitable for use as a secondary casualty receiving and treatment ship.

ASSAULT SHIP (LPH)

The LPH is the principal ship employed to support vertical assault (helicopterborne) ship-to-shore movement. It embarks, transports, and lands troops and their equipment and supplies. It may land the personnel and equipment by embarked transport helicopters or, under unusual circumstances, by landing craft provided by other ships. The LPH also provides facilities for Navy and Marine command and control, including a helicopter direction center, and a medical regulating control officer. When appropriate personnel are on board, the LPH serves as a primary casualty receiving and treatment ship and provides triage functions and early definitive medical and surgical care.

LANDING SHIP (LSD)

The LSD transports and lands amphibious vehicles or landing craft and their accompanying troops and equipment. It is capable of repairing landing craft and may also be used as a helicopter landing platform, a PCS for waterborne craft, and a boat haven. The LSD has limited medical facilities, and is not suitable for service as a casualty receiving and treatment ship.

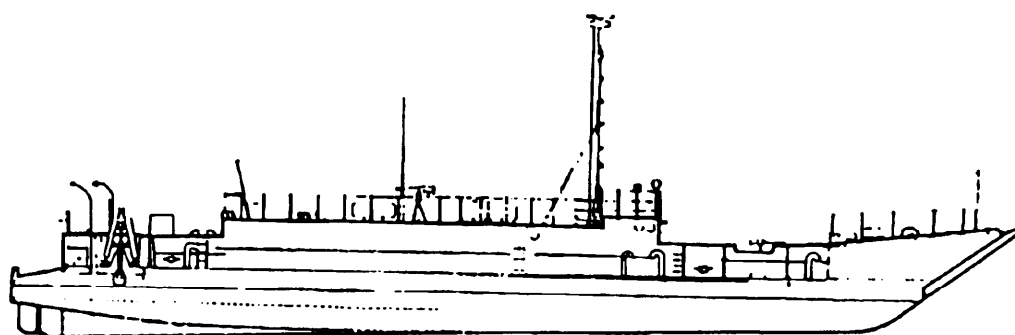
LANDING CRAFT

The types of landing craft used to land assault troops, their equipment, and supplies are as follows:

- **LANDING CRAFT PERSONNEL LARGE (LCPL)**—The LCPL is used to support UDT operations, as a gig/officer boat, and as a general

utility boat. Although not normally used for troops/cargo, it is capable of transporting 17 troops or 3,000 pounds of cargo. In amphibious operations, it is used for control/safety purposes within the boat group or as the LVT safety boat.

- **LANDING VEHICLE TRACKED (LVT)**—The LVT operates on both land and water and can negotiate obstacles that prevent other landing craft from beaching. Primarily used as a personnel carrier, it may also be used later in offshore personnel transfer. In addition, the LVT is an important vehicle for logistic support, since cargo may be carried directly from the ship to an inland beach dump.
- **LANDING CRAFT UTILITY (LCU)**—The LCU is made of steel with cargo space measuring 100— feet long by 18— feet wide and 4.5— feet deep, for a carrying capacity of 400 tons. See figure 12-1.
- **LANDING CRAFT MECHANIZED**—There are two types of LCMs: LCM 6 and LCM 8. The LCM 6 can carry 34 tons of cargo, 80 combat-equipped troops, or a 36-ton tank. The LCM 8 steel hull can carry up to 65 tons, 200 combat-equipped troops, or a 60-ton tank. The LCM is shown here in figure 12-2.
- **LANDING CRAFT, AIR CUSHION (LCAC)**—The LCAC is a fully amphibious, air-cushion vehicle capable of operating from an existing well deck ship. Its mission is to transport weapons systems, equipment, cargo, and personnel of the assault elements of the Marine Air/Ground Task Force both from ship-to-shore and across the beach. Figure 12-3 is a picture of an LCAC.



LANDING CRAFT UTILITY (ASSAULT), LCU 1610, 1626, AND 1646 CLASS

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Figure 12-1.—Landing craft utility (LCU).

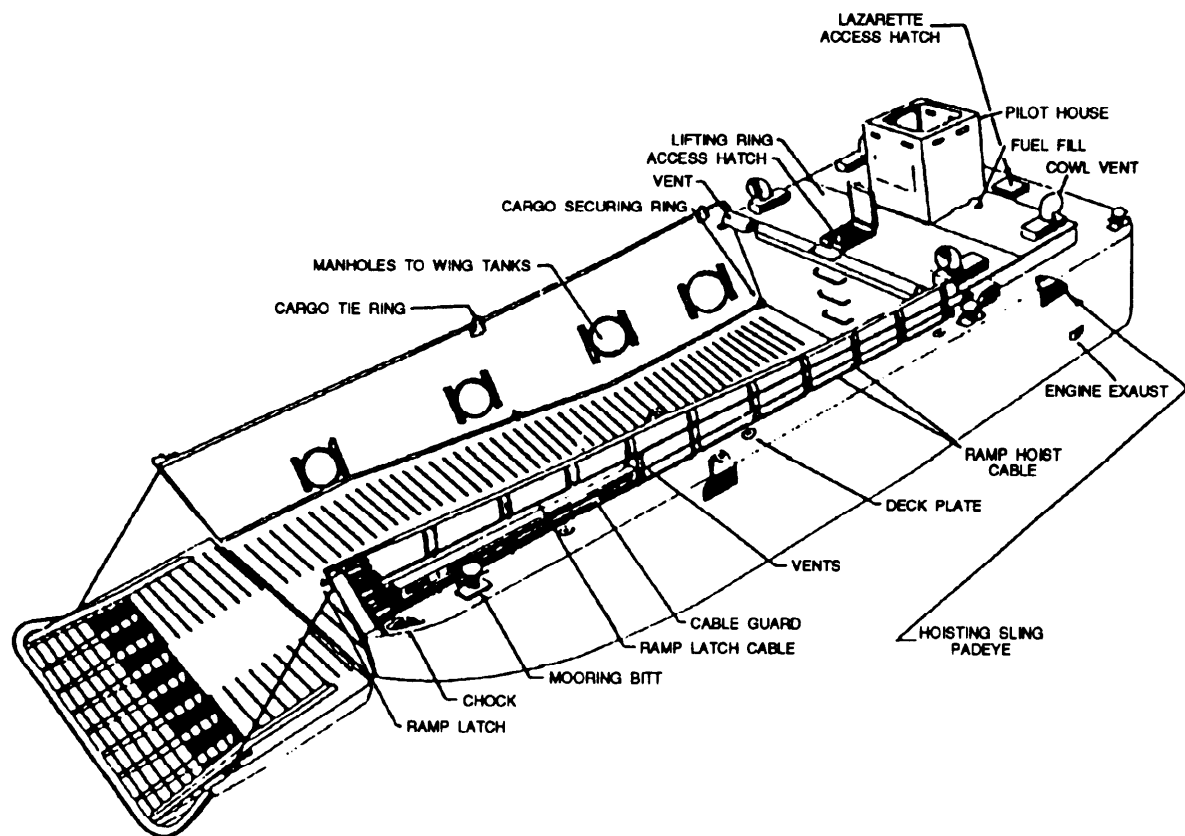


Figure 12-2.—Landing craft mechanized (LCM).

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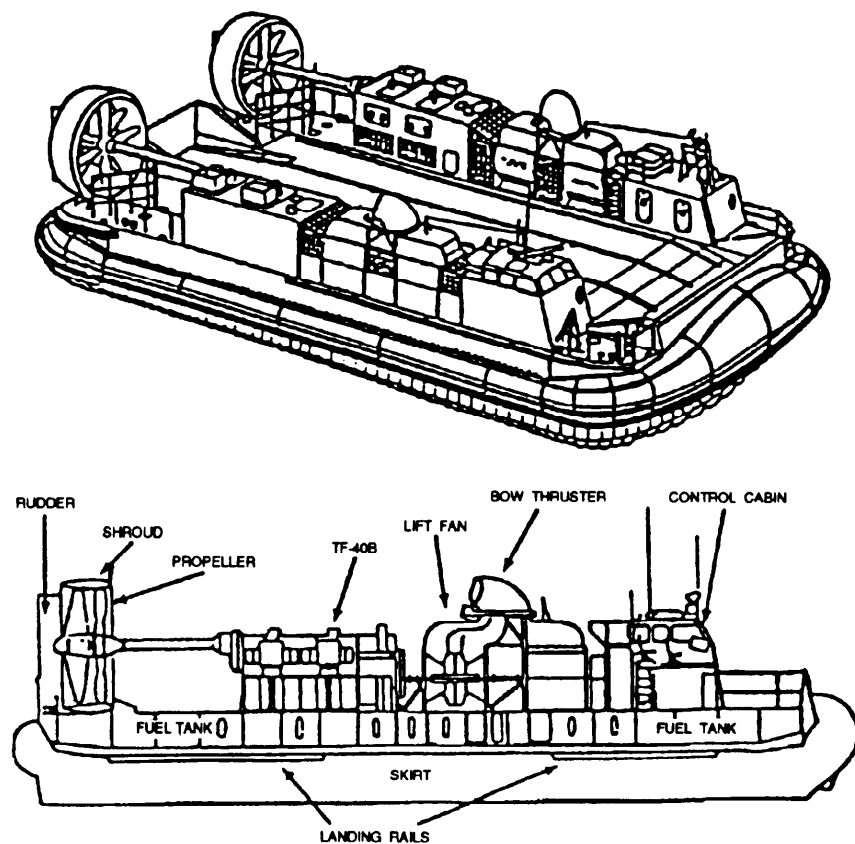


Figure 12-3.—Landing craft, air cushion (LCAC).

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These craft are capable of beaching where conditions permit and, with the exception of the LCPL, are provided with bow ramps for discharging personnel and equipment directly on the beach. Landing craft are usually preloaded and lifted to the objective area in the well of LHAs, LHDs, LSDs, and LPDs.

WATERBORNE SHIP-TO-SHORE MOVEMENT

LEARNING OBJECTIVES: Explain the procedures for conducting a ship-to-shore waterborne movement, including the sequence of operation, preparation, and execution.

Waterborne ship-to-shore movements are conducted in the following sequence:

1. Assembly and formation of landing ships, amphibious vehicles, and landing craft in the transport area.
2. Debarkation of troops and equipment from assault shipping into the landing craft and amphibious vehicles.
3. Transfer line operations, when required.
4. Landing of assault, combat support, combat service support, and reserve troops and their supplies.

When underway launch of amphibious vehicles and/or preloading landing craft is used, the ship-to-shore movement is modified. The sequence begins with the underway launch of the troops and equipment from assault shipping by amphibious vehicles or landing craft, and then continues as just listed.

FINAL PREPARATION

As the ATF starts the final approach to assigned positions for the assault, ships prepare for the debarkation of embarked troops, equipment, and supplies according to previously prepared plans. The beginning of debarkation and the timing of the ship-to-shore movement depends on the designated H-hour. All elements must be prepared to modify timing on short notice to conform with changes to H-hour.

SHIPS AND ELEMENTS POSITIONING

To ensure that H-hour will be met, all elements of the ATF arrive on station sufficiently in advance of H-hour to permit preliminary operations between the time the signal "Land the landing force" is made and H-hour. The time required depends upon a number of things, such as the need for pre-H-hour transfers, the nature of loading, and the number of scheduled waves.

EXECUTION

Prior to the arrival of the assault elements in the transport area, the decision will have been made to execute either the primary assault plan or one of the alternate plans. The amphibious task force commander initiates the landing with the landing force signal. When the signal has been made, ships that are debarking troops or material in the scheduled waves will take the actions that are necessary to meet the prescribed H-hour, and boats and craft that are being discharged proceed to the assembly area. After being advised on the progress of debarkation and consulting with the landing force commander, the amphibious task force commander will either confirm or modify H-hour.

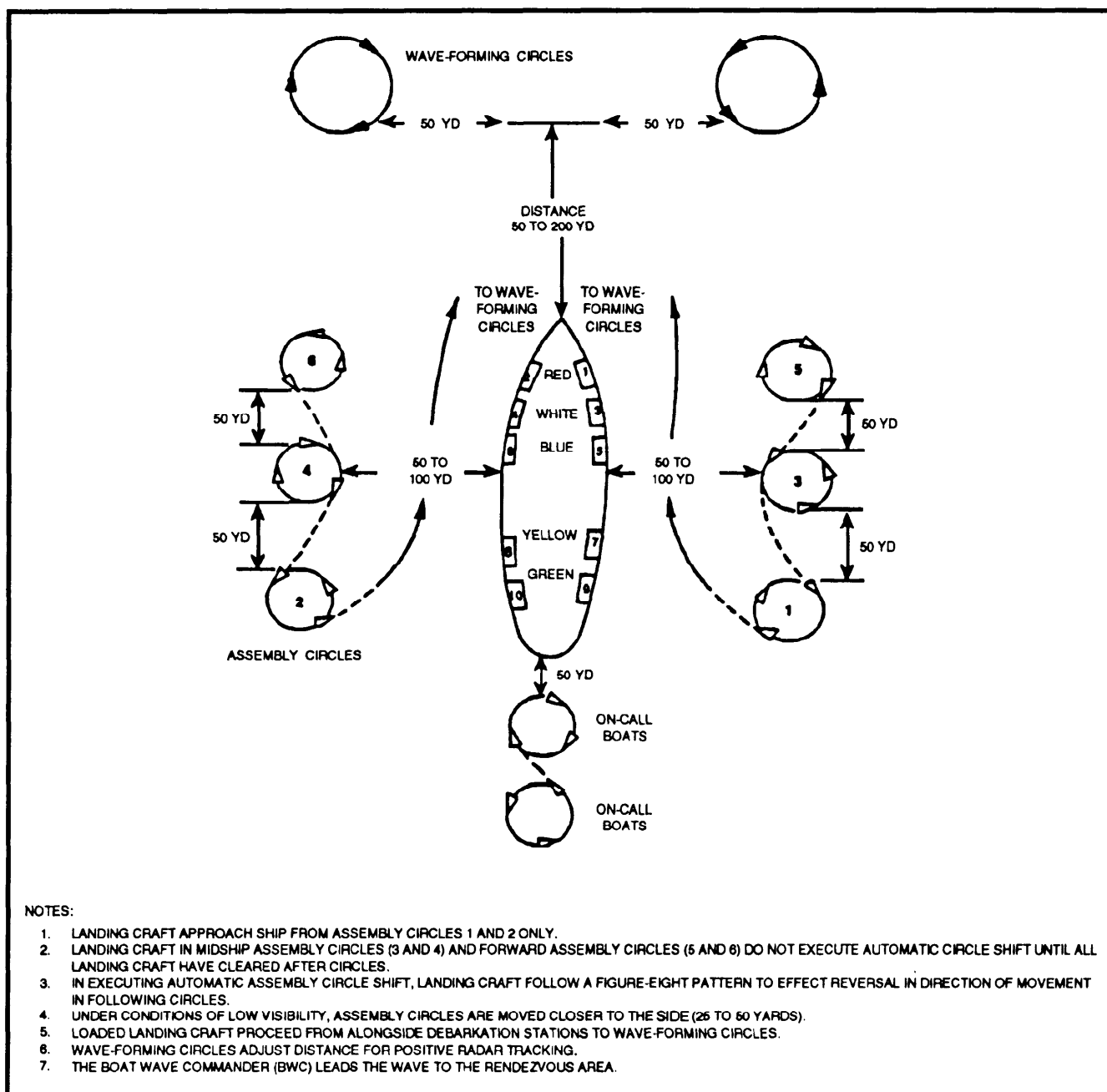
DEBARKATION

LEARNING OBJECTIVES: Explain debarkation, debarkation areas, and control areas. List the day and night procedures for calling boats alongside and into the well deck area.

Designated debarkation stations are used for off-loading troops into boats alongside. Debarkation nets for debarking over the side of the ship are used by all troops to be landed in boats except those accompanying equipment preloaded in craft. The following paragraphs pertain to the debarkation process.

DEBARKATION AREAS

Landing craft or boats are placed in assembly circles, wave-forming circles, or rendezvous areas (fig. 12-4) prior to dispatching them for their duty.



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Figure 12-4.—Landing craft assembly circles.

Assembly Areas

Assembly circles are located on each bow, beam, and quarter of the transport, as appropriate. On-call circles are located astern of the transport. Boats will only approach when called from the aft circle. Boats in midships and boats in the forward circle cannot shift until all boats have cleared the aft circle.

Wave-Forming Circles

Wave-forming circles are located close to the bow of the parent vessel to facilitate the assembly

of a wave after loading. The wave-forming circles provide CIC with the opportunity to better identify and control the wave.

Landing Craft Rendezvous Area

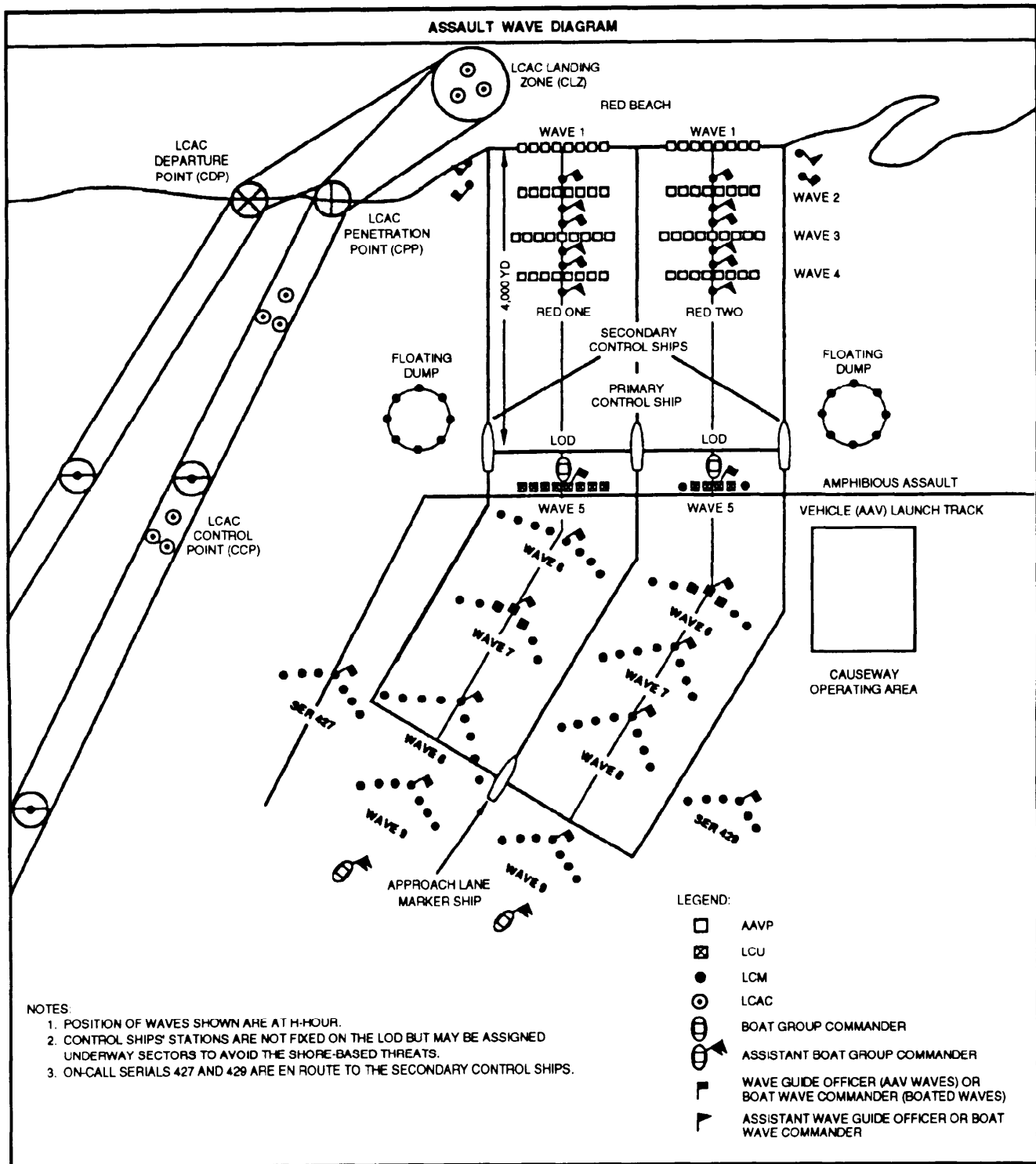
The rendezvous area is designated for assembling loaded landing craft by waves prior to dispatching them along the designated approach lane to the line of departure (LOD).

CONTROL AREAS

The assault wave control areas (fig. 12-5) of an amphibious assault are discussed in the following paragraphs.

Line of Departure (LOD)

The LOD is a designated line offshore approximately parallel to the landing beach. From this line the successive assault waves are dispatched for



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Figure 12-5.—Example of an assault wave diagram.

their final movement to the beach. When landing beaches are separated, each beach has its own LOD, which may be marked by a ship or ships of the control organization or by boats or buoys. In some landings the LOD may not be marked.

Boat Lanes

Boat lanes extend seaward from the landing beach to the LOD. The length of the landing beach determines the width of the boat lane. The flanks of the boat lane may be marked at the LOD by a control ship, a marker boat, or a buoy.

Approach Lanes

Approach lanes are extensions of the boat lanes from the LOD towards the transport area. They may be terminated by marker ships, boats, or buoys. Adjacent approach lanes may be parallel or may diverge seaward to provide for early dispersion of the

assault waves. Approach lanes indicate the exact routes for craft to use in approaching the LOD.

IDENTIFICATION OF DEBARKATION STATIONS

There is a maximum of ten debarkation stations, five on the starboard side and five on the port side, each identified by color and number (odd-numbered, starboard; even-numbered, port). See figure 12-4.

PROCEDURES FOR CALLING BOATS ALONGSIDE

Signals are used to call boats and landing craft from the assembly areas to embark troops at the debarkation stations.

Day

The starboard and port yardarms are used to signal for the starboard and port debarkation stations, respectively. The type of boat or craft is called to the

Information to Signal				Day Signal Flag	Night Signal Lights
Sides	Starboard Port			Use starboard yardarm Use port yardarm	Top GREEN light Top RED light
Boats and Displacement Landing Craft	LCPL LCU AAV LCM 6 LCM 8			L FLAG U FLAG T FLAG 6 FLAG 8 FLAG	Middle AMBER light Middle WHITE light Middle AMBER light, flashing Middle BLUE light Middle Green light
Stations	Color	Starboard	Port		
	RED	1	2	REDFLAG	Bottom RED light
	WHITE	3	4	WHITEFLAG	Bottom WHITE light
	BLUE	5	6	BLUEFLAG	Bottom BLUE light
	YELLOW	7	8	YELLOW FLAG	Bottom AMBER light
	GREEN	9	10	GREEN FLAG	Bottom GREEN light
Well Deck/ Tank Deck	Note: Paragraph A. 1.4. of NWP 22 contains special signals for the LHA well deck.			WHISKEY FLAG	Top WHITE light Middle (type landing craft indicated by middle light marry up and enter well deck) Bottom WHITE light Note: Turned off for calling single landing craft into well deck or to tank deck

Figure 12-6.—Signals for calling boats and landing craft to debarkation stations.

station by displaying the designated flag over the colored debarkation station flag (see fig. 12-6). For example, to call the LCM 8 required at (port) debarkation station BLUE 6, the signal bridge hoists the 8 flag over the BLUE flag at the port yardarm. When boats are alongside the designated station, the flag signal is hauled down.

Night

A light box (fig. 12-7) is mounted on a swivel base at the signal station on each side of the ship for aiming at a particular assembly area. The box is fitted with three holes on a vertical line and is shielded at the front so the lights are visible in one assembly area only. The holes will be of such size to permit interchange of the standard colored light filters for a 12-inch searchlight.

The top color in the light box indicates starboard or port side; the middle color indicates type of boat or craft desired; and the bottom color designates the debarkation station (see fig. 12-6).

Each debarkation station suspends a small, single-cell flashlight colored the same color as the debarkation station marker. All lights are in the same location as the station marker painted on the hull. These small lights serve only to identify the stations as the boat or craft comes close alongside.

Day and Night

Landing craft are called alongside by signal on orders from the debarkation officer. Loudspeaker equipment may be used as a supplementary means of

communication. Radio to the boat group commander (BGC) or his or her assistant may be used as a backup.

PROCEDURES FOR CALLING BOATS AND CRAFT INTO WELL DECKS/TANK DECKS

Signals are used to call boats and landing craft from on-call circles into the well decks, to the tank of an LST for stern gate marriages, or to embark troops or cargo.

Day

Signals are similar to those used in calling boats or craft to debarkation stations. To call boats or craft into well decks, the signal bridge hoists the signal for a type of boat or craft (see fig. 12-6). To call an LCM 8, for example, the signal bridge hoists (on either yardarm with the exception of LHAs) flag 8 over flag WHISKEY, which would tell the boats in the on-call circle that a single LCM 8 is to enter the well deck. To bring two LCM 8s married into the well, the signal is flag 8 over flag 8 over flag WHISKEY. This indicates that two LCM 8s are to marry up in the on-call circle and enter the well deck. Once the boats cross the sill, the well deck control officer positions them at any desired station. For calling boats or craft into the well deck of an LHA, the signal bridge hoists flag signals on the port or starboard yardarm to indicate which side of the split well deck the boat or craft is to make.

To call LCUs or LVTs to the tank deck, the signal bridge hoists the appropriate flag over the WHISKEY flag from either yardarm.

Night

At night, the light box and the same middle light color signals are used for calling individual boats and craft alongside. The top light for calling boats to the well deck is white instead of red or green. The bottom light is left blank when single boats are called. To have boats marry up, the bottom light is white. For LHAs, a steady top light indicates a boat or craft is to make the starboard side of the split well deck. A flashing top light indicates the port side of the split well.

CONTROL ORGANIZATION

LEARNING OBJECTIVES: Explain the duties of the control organization personnel, including the duties of the central control officer (CCO), a BGC, and the BWC.

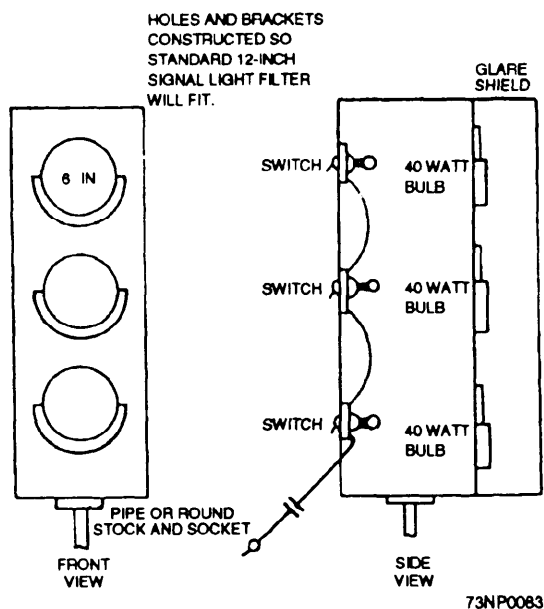


Figure 12-7.—Debarkation light box.

This section discusses the duties and organization of control personnel and the procedures for coordinating the various ships for an amphibious operation.

CENTRAL CONTROL OFFICER (CCO)

The CCO is designated by the CATF for overall coordination of the waterborne assault. This officer is embarked on the control ship, and his/her responsibilities include the following:

- Planning and supervising the waterborne ship-to-ship movement
- Organizing the Navy control group to support the ATF landing plan
- Maintaining liaison with the tactical air officer (TAO)
- Maintaining liaison with the tactical logistics (TACLOG) group

ASSISTANT CENTRAL CONTROL OFFICER (ACCO)

An ACCO may be designated if the scope of the operation requires it. He/she embarks in an appropriate ship or craft and coordinates, as necessary, the movement of landing craft, amphibious vehicles, and landing ships in his/her designated area.

PRIMARY CONTROL OFFICER (PCO)

A PCO is designated for each colored beach and is responsible for the following:

- Providing detailed plans, called PCO instructions, to conduct the ship-to-shore movement for amphibious assaults or withdrawals across a colored beach
- Maintaining current location and status of all ships, landing craft, and boats assigned to conduct the landing on the assigned beach
- Monitoring surf conditions and weather predictions and recommending the termination of boating when conditions warrant
- Maintaining the status of debarkation or embarkation
- Landing scheduled waves at the correct beach at the specified time

- Arranging for fueling boats and providing rest and food for boat crews
- Providing liaison to the surfaceborne RLT TACLOG detachment
- Conducting assault craft salvage operations
- Coordinating the employment of landing ships and craft within his or her area of responsibility following the initial assault

SECONDARY CONTROL OFFICER (SCO)

The SCO embarks in the secondary control ship (SCS) and is a principal assistant to the PCO. The SCS is assigned a fixed point station on the LOD or underway sector in the vicinity of the PCS; SCO\SCS duties include the following:

- Maintaining duplicate control records and plots required of the PCO and PCS
- Monitoring PCO radio circuits
- Controlling the waterborne ship-to-shore movement over a numbered colored beach when two or more numbered beaches are designated for colored beach
- Assuming PCO and PCS duties in an emergency

BOAT GROUP COMMANDER (BGC)

The BGC is embarked in an LCPL displaying the ZERO flag over the beach flag and is under the tactical control of the PCO. The BGC is thoroughly briefed on the approach schedule; assault wave, landing area, and transport area diagrams; and weather conditions; and is responsible for the following:

- Maintaining discipline within the boat group
- Maintaining proper wave positions in the rendezvous area
- Leading the first displacement landing craft wave from the rendezvous or underway launch area to the surf zone
- Controlling waterborne traffic off the beach

After the last scheduled wave has landed, the BGC assumes the duties as the traffic control officer (TCO) for the beach.

ASSISTANT BOAT GROUP COMMANDER (ABGC)

The ABGC embarks in an LCPL displaying the WHISKEY flag over the beach flag and reports to the BGC. The ABGC is responsible for the following:

- Assuming BGC duties in an emergency
- Assisting in organizing waves into proper position in the rendezvous area
- Assisting in dispatching waves from the rendezvous area to arrive at the LOD on time
- Checking for stragglers or malfunctioning/damaged assault craft in later waves
- Following the last scheduled wave to the surf zone
- Conducting landing craft and amphibious vehicle salvage operations

Upon departure of the last scheduled wave from the rendezvous area, the ABGC becomes the senior salvage officer afloat and reports to the beachmaster for duty.

BOAT WAVE COMMANDER (BWC)

The BWC embarks in the number one displacement landing craft and displays the beach flag over the wave number numerical flag. The BWC communicates with the BGC, ABGC, and PCS and is responsible for the following:

- Forming the wave into proper organization for landing
- Maintaining boat discipline in the wave
- Maintaining proper boat and wave intervals
- Arriving at the LOD and beach on time

WAVE GUIDE OFFICER/ASSISTANT WAVE GUIDE OFFICER

A wave guide officer and an assistant wave guide officer are assigned to each wave of amphibious vehicles. They are normally provided by the ship in which the wave is embarked. Each officer embarks in an LCPL that is equipped for communication the same as the BWC's craft. The wave guide officer's duties are as follows:

- Forming up the amphibious vehicles and guiding them to position seaward of the LOD line.

- Reporting to the PCS, giving details affecting the readiness of his/her wave.
- Taking station ahead of the wave, with his/her assistant astern of the wave, and leading the wave to the LOD and across on signal from the PCS.
- Ensuring that the wave is maintaining proper position in the boat lane and reaches the proper beach on time. (This officer is assisted by directions from the PCS.)
- Guiding the wave to the first line of breakers. Here the wave guide boats take station in the return lane if the amphibious assault vehicles are to return seaward after landing, and guide returning vehicles to the designated control ship or boat haven. If the vehicles do not return seaward, the guide boats normally report to the PCS.

STANDARD IDENTIFICATION FLAGS, LIGHTS, MARKERS, AND SIGNALS

LEARNING OBJECTIVE: Identify the standard identification flags, lights, markers, and signals used in ship-to-shore movement.

A variety of standard identification flags, lights, and markers are used in the ship-to-shore movement (refer to NWP 22-3, appendix C). In addition, a number of special markers and signals are used, as described in later paragraphs of this chapter.

BEACH MARKING FLAGS AND PANELS

During the planning stage of an amphibious assault, beach areas are divided into sections and assigned colors for identification purposes. Beach markers are approximately the size of a No. 4 flag, and are with the normal beach colors of red, yellow, green, or blue. Fluorescent cloth is used in beach flags and markers wherever possible for greater ease in identification under all weather conditions.

BEACH FLAGS

Beach flags (fig. 12-8) are flown from designated boats and ships; the color and design of the flag corresponds to the beach assignment. When not otherwise specified, the size of flags flown from boats will be a No. 8 signal flag or larger. Fluorescent cloth

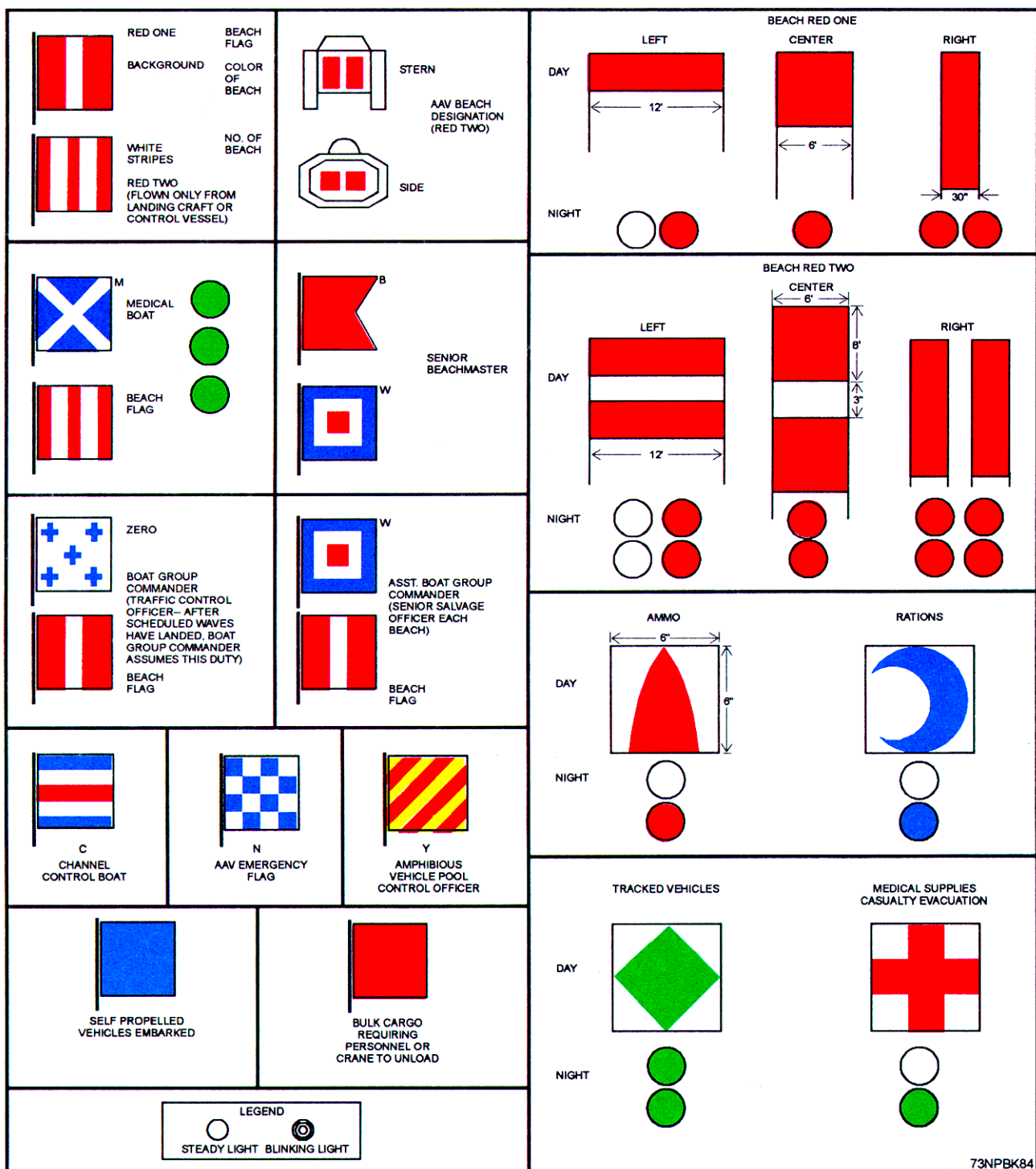
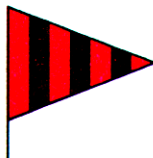

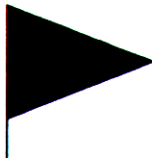



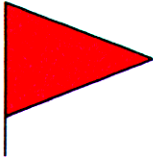

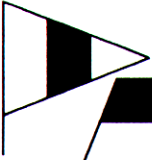









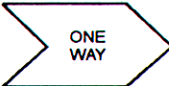
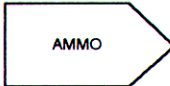
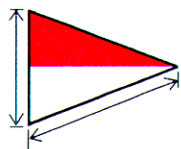
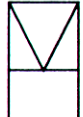
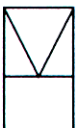
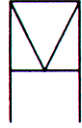


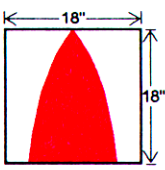
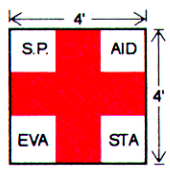
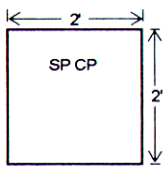

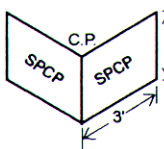

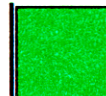







Figure 12-8.—Beach flags, markers, and signs.

<p>ROCKS, SHOALS AND OBSTRUCTION</p> <p>DAY</p>  <p>NIGHT</p> 	<p>PORT</p>  	<p>WHEELED VEHICLES</p>  		
<p>STARBOARD</p> <p>DAY</p>  <p>NIGHT</p> 	<p>FAIRWAY OF CHANNEL</p>   	<p>OIL AND GAS</p> <p>DAY</p>  <p>NIGHT</p>  	<p>MISCELLANEOUS SUPPLIES</p>    	
 <p>ONE WAY</p> <p>THIS SIGN ALSO USED TO DENOTE DIRECTION OF TRAFFIC FLOW</p>	 <p>AMMO</p> <p>DUMP DIRECTION SIGN</p>	 <p>DUD FLAG</p>	<p>LCAC PENETRATION POINT</p> <p>DAY</p> <p>BEACH EGRESS</p>  <p>RIGHT FLANK</p>  <p>LEFT FLANK</p>  <p>NIGHT</p>   <p>THREE 6-FOOT BY 6-FOOT MARKERS WHITE BACKGROUND WITH INVERTED INTERNATIONAL ORANGE TRIANGLE PLACED IN AN INVERTED "Y" TO MARK RIGHT AND LEFT FLANKS AND BEACH EGRESS POINT</p> <p>THREE STROBE LIGHTS, ORANGE (OR INFRARED), 3 FEET APART MOUNTED ON A POLE. PLACED IN AN INVERTED "Y" TO MARK RIGHT AND LEFT FLANKS AND BEACH EGRESS POINT.</p>	
 <p>DUMP FLAG</p>	 <p>S.P. AID EVA STA</p> <p>MEDICAL EVACUATION STATION</p>	 <p>SP CP</p> <p>SHORE PARTY</p>		
 <p>ROAD WAY</p> <p>MINE CLEARED AREA</p>	 <p>C.P. SPCP</p> <p>SHORE PARTY</p>			
 <p>CARGO REQUIRING ASSISTANCE OF PRIME MOVER TO UNLOAD</p>	 <p>BOATS ASSIGNED TO FLOATING DUMPS</p>	 <p>M</p> <p>CASUALTY RECEIVING TREATMENT SHIP (CRTS)</p> 	 <p>S SALVAGE BOAT</p>	<p>LEGEND</p>  <p>STEADY LIGHT</p>  <p>BLINKING LIGHT</p>

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Figure 12-8.—Beach flags, markers, and signs—Continued.

is used in beach flags and markers whenever possible for greater ease in identification.

SIGNAL OR MARKER LIGHTS

Signal or marker lights should be of sufficient intensity to be visible at a distance of at least 1,000 yards. Beach and unloading marker lights should be directional with not over 10-point visibility to seaward only. Should marker lights conflict, unloading-point marker lights may be one-half the intensity of beach center and flank markers.

DISPLAY OF STANDARD FLAGS AND MARKERS

Boats, craft, and amphibious vehicles in scheduled waves should remove from sight all special designators, such as flags and boat team paddles, at the time of crossing the LOD. Required designators should again be displayed following the landing of the last scheduled wave, or earlier if directed by the beachmaster, as shown in figure 12-9.

FLAG REQUIREMENTS

All wave guide officer, BWC, salvage, medical, safety, and ABGC boats should carry the ZERO, the WHISKEY, and the numeral flags for all waves in order to facilitate substitution of one boat for another, if required.

NIGHT AND LOW-VISIBILITY SIGNALS

At night and during conditions of low visibility, colored lights should be used instead of flags and other daylight markers. All-around lights, except oceanographic markers, should be displayed only after H-hour. During darkness, screened wake lights should be used on the sterns of all assault boats and vehicles. Lights should be displayed as indicated in figure 12-10.

BOAT TEAM PADDLES

Each boat team should be provided with a boat team paddle on which is prominently marked the boat team number that is shown in the landing craft and amphibious vehicle assignment table. A member of each boat team should be designated to display the paddle prominently at all times that the team is in the landing craft or amphibious vehicle, until the LOD has been crossed.

1. Paddle Number—The number on the paddle indicates both the scheduled wave number and the position of the boat or amphibious vehicle in that wave. The first digit(s) indicate(s) the wave; the last digit(s), the position within the wave. For example, boat team paddle 2-3 (fig. 12-11) indicates the third boat or amphibious vehicle in the second wave; boat team paddle 9-3 indicates the third boat or amphibious vehicle in the ninth wave. Each coxswain should be furnished with a copy of the landing diagram showing wave composition and timing.

2. Visibility—Boat team paddles are constructed for good visibility at a considerable distance, yet are easy to handle. They are three-sided, readable from any direction, with black numerals on a white background. Paddles are made to the following specifications:

- Three rectangularly shaped boards, 14 by 10— inches, nailed together to form a three-sided figure, attached to a wooden staff 6—feet by 2— inches by 2— inches
- Black numerals, 7— inches high, on a white background

3. Boats carrying serials and free boats—These boats should display paddles on which is clearly marked the serial number of the embarked serial. Each ship is responsible for ensuring that boats carrying serials unloaded from that ship clearly display the correct serial numbers. The numbers must be displayed constantly until the landing craft has beached.

Cargo Identification

Boats carrying various types of cargo display distinctive flags or lights so control and beach party personnel may readily identify the type of cargo embarked. The colored and numeral flags or colored lights used to identify various types of cargo are listed in figure 12-12. For example, a boat that is assigned to a floating dump and carries flame-thrower fuel flies a 3 flag under a GREEN flag or, at night, shows a fixed RED light under a fixed GREEN light.

Load Dispatching Signals

All signals normally are paralleled by voice radio from the central control ship. All lights used are shielded and aimed at the approaching wave only.

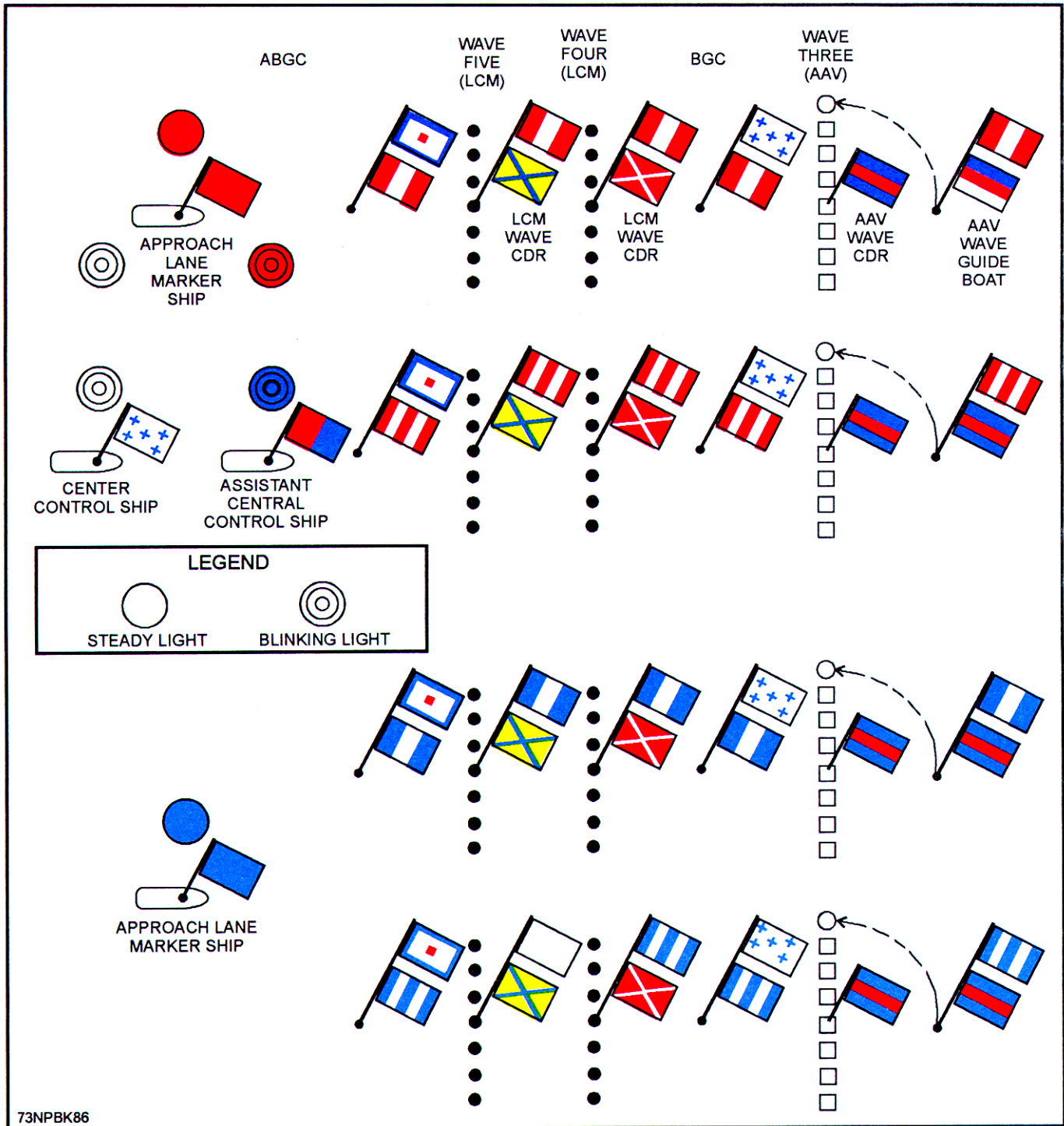


Figure 12-9.—Standard flags and identification insignia.

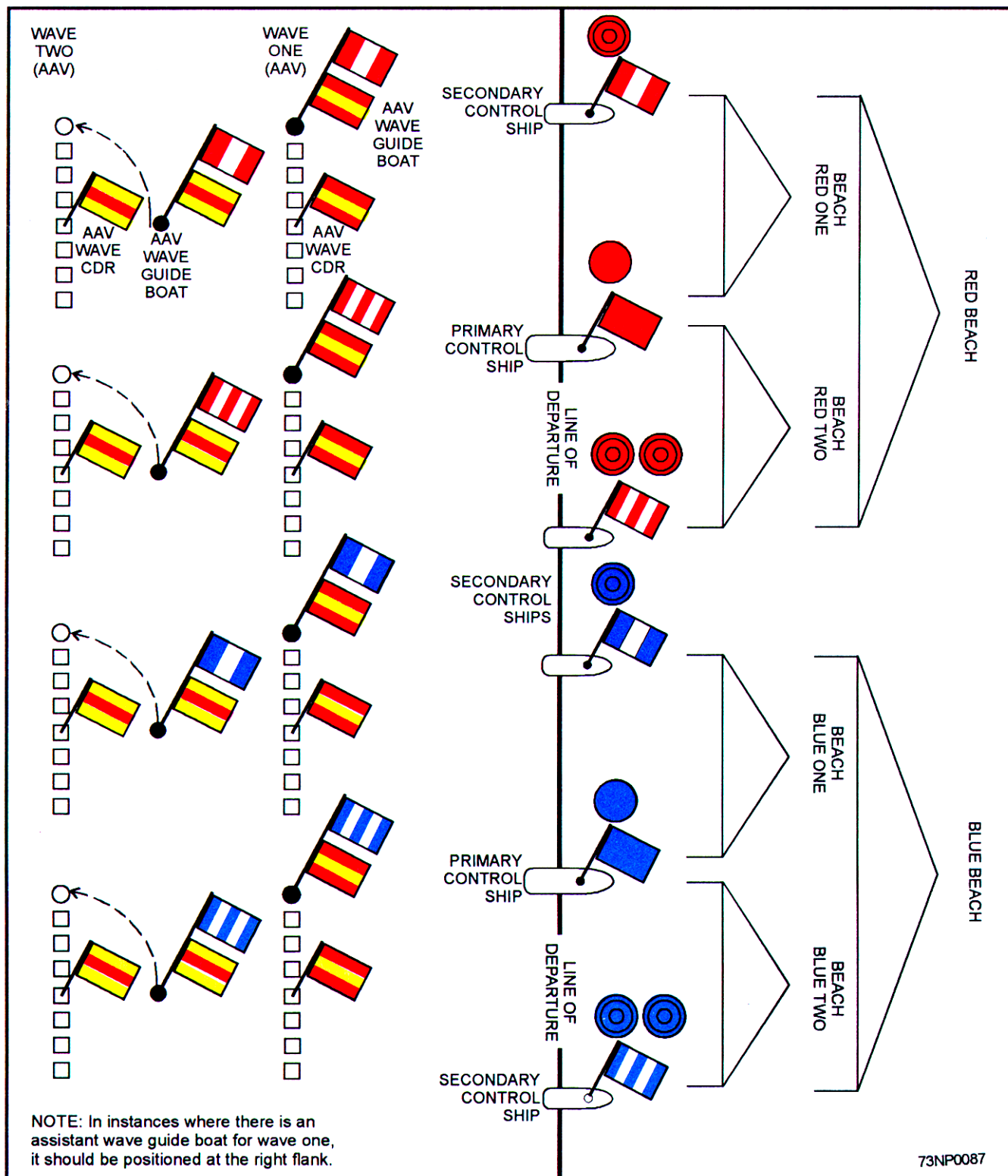


Figure 12-9.—Standard flags and identification insignia—Continued.

	Light
a. Ships, Boats, and Landing Craft Central Control Ship Assistant Central Control Ship Primary Control Ship Secondary Control Ship Approach Lane Marker Ship Boat Group Commander (Traffic Control Officer) Assistant Boat Group Commander (Senior Salvage Officer) Boat Wave Commander Wave Displacement Landing Craft Salvage Boats Medical Boats Floating Dumps	2, vertical, blinking WHITE 2, vertical, blinking, color to be designated 1, steady, directed seaward, same color as beach (all-around after 1st wave touches down) 1, blinking, same color as beach 1, steady, same color as beach, directed seaward 3 wake lights, vertical, 1 foot apart, same color as beach (convertible to all-around) 3 wake lights, horizontal, 2 feet apart, RED (convertible to all-around) 2 wake lights, vertical, 1 foot apart, same color as wave 1 or 2 wake lights, horizontal, colored (see c) 3 wake lights, horizontal, 2 feet apart, RED (convertible to all-round) 3, vertical, steady, 1 foot apart, GREEN, all-around 2 or 3 vertical (1 steady GREEN over 1 to 2 cargo colors, 2 feet apart (see figure 12-12)
b. Ocean Markers and Navigation Aids Obstruction Channel, port side Channel, Starboard side Fairway	Blinking WHITE over blinking RED Blinking GREEN Blinking RED Blinking WHITE
c. Screened Wake Lights 1st Wave 2nd Wave 3rd Wave 4th Wave 5th Wave 6th Wave 7th Wave 8th Wave Successive Waves	1 RED 1 BLUE 1 AMBER 1 GREEN 2 RED (see note) 2 BLUE (see note) 2 AMBER (see note) 2 GREEN (see note) Repeat entire sequence
Note: Two lights, horizontal, 3 feet apart.	

Figure 12-10.—Wave Lights requirements.

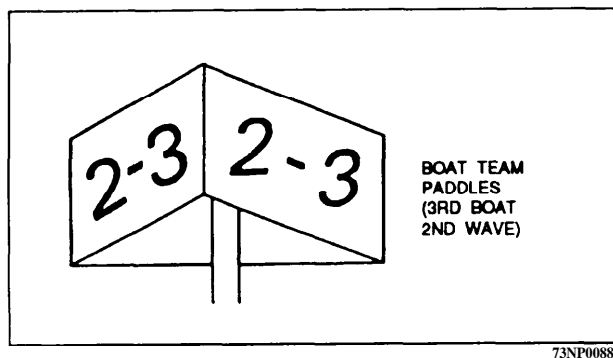


Figure 12-11.—Boat team paddle.

Departure

Departure time sequence is shown in figure 12-13. For a 5-minute standby for wave one, the ONE flag will be placed at the dip. The nighttime signal is a steady RED light for 30 seconds. For a 2-minute standby, the ONE flag is closed up, and the nighttime signal is a flashing RED light for 30 seconds. The nighttime signal for a 1-minute standby is a flashing RED light for 50 seconds, then a 10-second steady RED light. There is no daytime signal for a 1-minute

Floating Dump Supplies	Day	Night
	Green flag light over cargo flag	Steady GREEN light over cargo color light(s), 2—feet apart
Rations	ONE flag	1 steady WHITE light
Medical supplies	TWO flag	1 steady GREEN light
Water	Four flag	1 steady BLUE ight
81-mm Ammunition	FIVE flag	1 steady AMBER light
Bulk Cargo	RED flag	2 steady RED lights
Self-Propelled Vehicles	BLUE flag	2 steady BLUE lightrs
Cargo Requiring Prime Mover	YELLOW flag	2 lights, steady BLUE over steady AMBER

Figure 12-12.—Floating dump cargo identification.

Wave	Departure	Day	Night
Wave One	5 minute 2 minute standby 1 minute standby	One flag at dip One flag close-up — — —	Steady RED light for 30 seconds Flashing RED light for 30 seconds Flashing RED light for 50 seconds then a 10-second steady RED light
	Departure time	One flag hauled down to dispatch wave	Extinguish 10-second steady RED light to dispatch wave
Wave Two	2 minute standby	Numeral flag of wave close-up	Flashing BLUE light for 30 seconds
	1 minute standby	— — —	Flashing BLUE light for 50 seconds, then a 10-second steady BLUE light
	Departure time	Numeral flag hauled down to dispatch wave	Extinguish 10-second steady BLUE light to dispatch wave
Wave Three		Same as wave two	AMBER light is used
Wave Four		Same as wave two	GREEN light is used
Wave Five		Same as wave two	RED light is used
Wave Six		Same as wave two	BLUE light is used
Successive Waves		Continue using cycle outlined above for waves three through six	

Figure 12-13.—Departure time sequence.

standby. For dispatching during daytime, the ONE flag will be hauled down; and for nighttime, extinguishing of the 10-second steady RED light. The color lights for wave two will be blue; wave three, amber; wave four, green. After wave four, the color of lights starts repeating: wave five would be red; wave six, blue; and so on. After the 5-minute standby for wave one, no other 5-minute standby will be used.

Numeral flags are normally flown from both port and starboard yardarms. However, waves on both sides might not be scheduled to land at the same time. In that case, the PCS hoists the appropriate signal on the yardarm on the side of the ship the wave is scheduled to pass. Waves with two-digit numbers are dispatched by a hoist using the numeral flag corresponding to the last digit of the wave number.

In addition to megaphone, radio, and blinker messages, various visual signals are used in beach operations, as shown in NWP 22-3, appendix C.

Visual Emergency Signals for Boats

- The following signals are visual emergencies:
- OSCAR flag—Man overboard
 - Life jacket on perpendicular boat hook—Breakdown
 - BRAVO flag—Fire/flooding
 - ZULU flag—Loss of receive/transmit communications

GRID REFERENCE SYSTEM

LEARNING OBJECTIVES: Explain the purpose of the grid reference system. Identify procedures for using it.

The amphibious grid reference system is used primarily to control waves moving in the lanes from the rendezvous area to and across the LOD and until they land on the assigned beach. The grid is an overlay composed of a series of boat lanes (LOD to beach), one for each scheduled wave. Each boat lane is marked with the time and speeds applying to that specific wave. A standard voice procedure is used that reduces voice transmissions to a minimum while transmitting accurate positions to the waves. The procedure virtually eliminates the probability of “pyramiding” vectors to the waves.

The system may also be used in the approach lanes and enroute from the parent ship or transport area to the rendezvous area or LOD provided frequencies are assigned that prevent interference. Boat waves or nonscheduled units may be guided effectively by this system during periods of darkness or reduced visibility.

BEFORE DEBARKATION

Before debarkation of the boats and amphibious vehicles of an amphibious assault, the BGC, all BWCs, and all wave guide officers are issued a gridded diagram of the boat lane to be used (see fig. 12-14). The diagram is an approximate picture of the boat lane from the rendezvous area to the beach.

- Longitudinal lines in the diagram divide the lane into three sections: L (left), C (center), and R (right). Left and right sections are each 40 percent of the total width; the center section is 20 percent of the total width.

- Lateral lines are drawn at 200-yard intervals along the lane and are numbered to indicate distance to go in hundreds of yards.
- Lane positions are described by a letter (*L*, *C*, or *R*) followed by a number of one or two digits. Positions outside the lane are indicated by a double letter: *RR* or *LL*.

Time lines should be plotted on the grid overlay by the following method:

- Using the given wave speed of advance (SOA) and touchdown time, determine LOD crossing time for that wave.
- For the final 1,000-yard transit, waves will be making battle speed (BS); therefore, count backwards from touchdown time to the BS line, accounting for the complete time (whole minutes and fractions).
- Divide the time from LOD to BS, again accounting for every whole minute and fraction.
- Label all times on the boat lanes blank, as shown in figure 12-14.
- When more than one wave is being controlled, the time clock will be divided into four primes:

Prime	Time (Seconds)	Waves Marked
0	52 1/2 to 07 1/2	1, 5, 9
1	07 1/2 to 22 1/2	2, 6, 10
2	22 1/2 to 37 1/2	3, 7, 11
3	37 1/2 to 52 1/2	4, 8, 12

If the 15-second primes for grid construction (and grid position transmission) are used, the complete time for the transit can be accounted for.

The control party has the gridded boat lanes plotted to scale in CIC, one lane for each wave to be tracked and controlled, to minimize confusion and obtain a clear and concise picture of the movement of each wave.

RENDEZVOUS AREA

In the rendezvous area, boats should be provided navigational assistance to keep the waves in their rendezvous circles. In addition, CIC tracks the waves and fixes the position of each wave on the grid upon the departure of the waves from the rendezvous area. The control party then transmits the position to the BWC by flashing light or by voice radio. The BWC, on receipt of a grid position that indicates the wave is

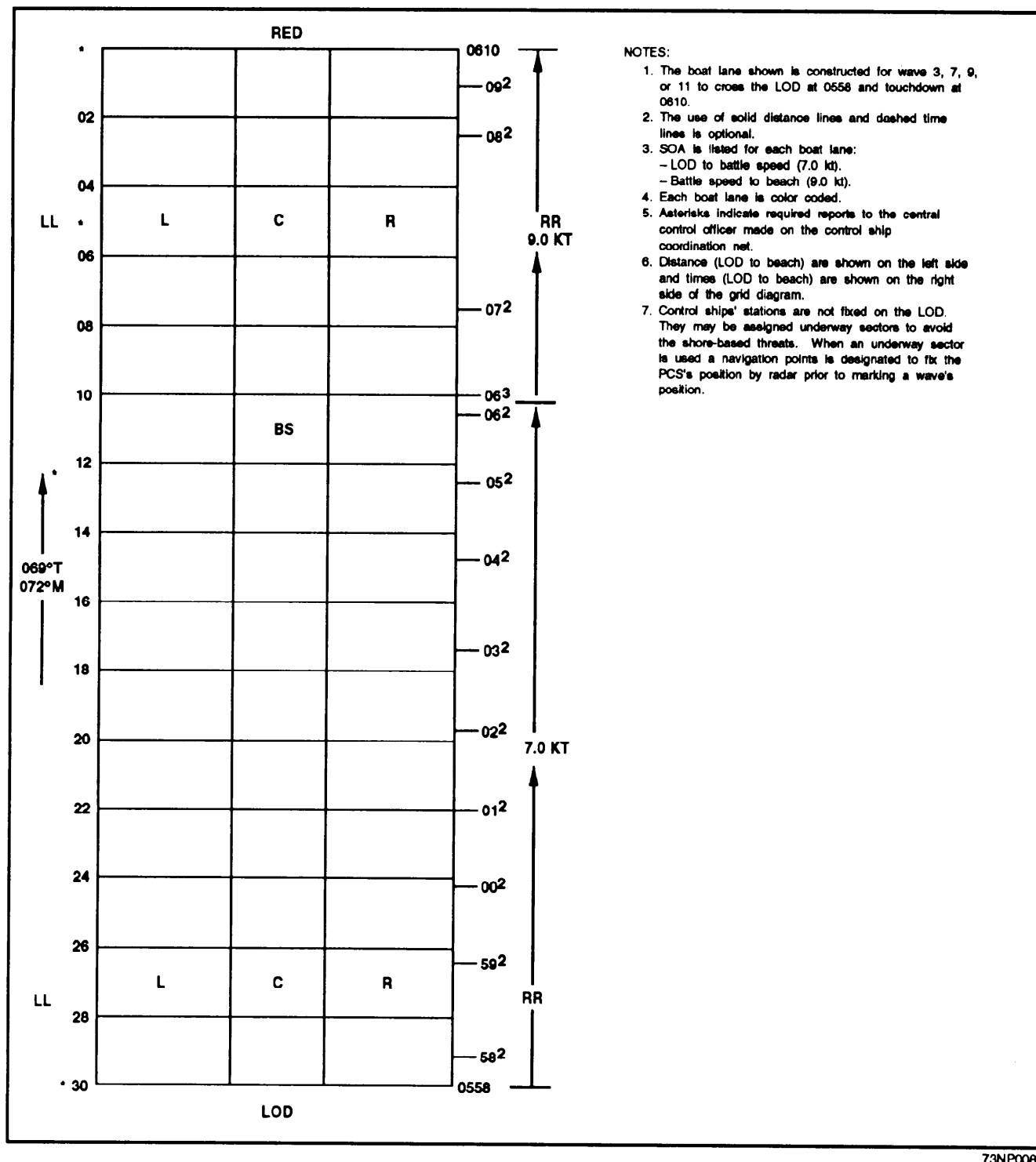


Figure 12-14.—Amphibious grid reference system.

not in the center of the proper lane and/or not progressing along the lane according to schedule, corrects the position and movement of the wave. Control officers supplement grid positions with vectors and “early” or “late” information as necessary.

Grid positions normally are transmitted every minute from the rendezvous area to 200 yards from the beach unless corrective action is required, in which case they are transmitted more frequently. Grid positions will be provided once each minute in periods of low visibility, from the predesignated assembly

circle to the beach. The last 1,000 yards to the beach is run at full (battle) speed. However, the control group commander should ensure that wave one never arrives early, because of the hazards from pre-H-hour neutralization fires, the difficulty of terminating such fires early, and the necessity for beach preparation by such fires.

To obtain full benefit from the grid and to track the wave's progress, wave commanders will plot their position each time the controlling station transmits it. The effects of wind and sea and/or taking incorrect headings can thus be determined and corrected. Once firm radio communications are established, grid positions can be transmitted without requiring wave commanders to receipt. However, vectors should be receipted for. If the wave commander fails to receipt for orders by radio, the primary control ship will continue to transmit "blind" and request visual acknowledgment.

COMMUNICATION CIRCUITS

Two nets are designated for each colored beach: channels ALFA and BRAVO. Channel ALFA is a direct net, used by the PCS to pass grid positions and boat wave directions to the BWCs and wave guide officer from the LOD until touchdown. Channel BRAVO, the beach boat operations net, is used by the PCO/PCS and ships to control assigned boats before they are dispatched to the beach. Touchdown reports and operational/administrative traffic between control ships and boats are passed on to this station. Good judgment should be used when using the net, to avoid cluttering.

Voice Calls

Voice calls on the control group net and beach boat operation net use daily changing call signs. The beach boat control net uses JANAP 119 call signs. Additionally, the boat group commander uses the JANAP 199 call signs on all nets to avoid confusion with wave call signs.

Voice Transmissions

The following are examples of voice transmissions:

Turnover from parent ship to PCS (channel BRAVO)

"____ ONE, THIS IS____ SWITCH TO CHANNEL ALFA AND REPORT TO____ FOR CONTROL AND VECTOR TO THE BEACH. OVER."

Reporting it to PCS (ALFA)

"____, THIS IS TWO BLUE ONE. REPORTING FOR CONTROL AND VECTOR TO THE BEACH. OVER."

Positive control

"TWO BLUE ONE, THIS IS____ HOLD YOU UNDER POSITIVE RADAR CONTROL. STEER COURSE____ AND SPEED____ FOR THE LOD. SET AND DRIFT AT THE LOD IS (DIRECTION) AND (SPEED, IN KNOTS). OVER."

"TWO BLUE ONE, THIS IS____. DO NOT HOLD YOU UNDER POSITIVE RADAR CONTROL. MAINTAIN PRESENT COURSE AND SPEED (POSITION). OVER."

"ONE BLUE ONE, THIS IS____ HOLD YOU UNDER POSITIVE RADAR CONTROL. STEER COURSE____ AND SPEED____ FOR THE LOD. SET AND DRIFT AT THE LOD IS (DIRECTION) AND (SPEED, IN KNOTS). MY INTENTION IS TO EXECUTE A LEFT (RIGHT) FLANKING MOVEMENT SEAWARD OF THE LOD. OVER."

Dispatch from LOD

"TWO BLUE ONE, THIS IS____. YOU ARE DISPATCHED FROM THE LOD TO THE BEACH. STEER COURSE____, SPEED____. OVER."

LOD crossing report (control group net)

____, THIS IS____. TWO BLUE ONE CROSSED LOD LATE ONE HALF. OVER."

Grid posits (ALFA)

"TWO BLUE ONE, THIS IS____. GRID POSIT ROMEO THREE EIGHT OUT." (Wave 2 Blue 1 is right side of boat lane, 3,800 yards from the beach and on time.)

TWO BLUE ONE, THIS IS____ GRID POSIT ROMEO THREE TWO EARLY ONE. OUT." (Wave 2 Blue 1 is right side of boat lane, 3,200 yards from beach and is ahead of schedule 1 minute.)

Vectoring waves (ALFA)

"TWO BLUE ONE, THIS IS____ GRID POSIT ROMEO THREE ZERO EARLY ONE. VECTOR LEFT TEN. OVER." "TWO BLUE ONE, THIS IS____ GRID POSIT ROMEO, ROMEO TWO SEVEN EARLY ONE. VECTOR LEFT TWENTY. OVER."

Battle speed (ALFA)

“TWO BLUE ONE, THIS IS _____ GRID POSIT CHARLIE ONE ZERO. BATTLE SPEED. BATTLE SPEED. OVER.”

Touchdown report (wave) (channel ALFA)

"_____, THIS IS TWO BLUE ONE. TOUCHDOWN, TOUCHDOWN, TOUCHDOWN. OVER.”

Touchdown reports (control group net)

"_____, THIS IS _____. TWO BLUE ONE TOUCHDOWN. LATE ONE QUARTER. OVER.”

Governing Notes

The following governing notes are to be used when communicating to waves:

- _____, where appearing, indicates daily changing Call signs.
- The shift to channel ALFA can be ordered by PCS when desired, but no later than when boat waves cross the LOD. If no channel shift order is given, boat waves will automatically shift to channel ALFA upon crossing the LOD.
- Amphibious assault vehicle (AAV) waves require an intention statement from PCS when PCS takes positive control.
- A full call-up is required for all transmissions to ensure that the proper wave received the information. When ordering courses to boat waves, make sure they are given in magnetic degrees.
- All reports to the CCO should include a time status. Fractions of minutes are spoken one-quarter, one-half, three-quarters, and so forth.
- Because many boat compasses are unreliable, it is best to change the course of boats by vectors of 10 degrees to 30 degrees instead of course headings. To minimize the initial error and consequent loss of time, the BGC, ABGC, and all BWCs should check and compare their magnetic compass headings with the PCS while transmitting from the wave-forming circles to the landing craft rendezvous area. Vectors may be given at any time to maintain a wave's position in the boat lane center. However, vectors should be held to 10 degrees or less in the surf zone for boat safety.

- Waves outside the boat lanes must be vectored to regain boat lane positioning.
- Prior to the order for BS, speed changes may be given at any time to keep waves on time. Speed changes must be ordered when waves are early or late 2 minutes or more.
- BS must be ordered at the 1,000-yard mark. Even if a wave is doing maximum speed before the 1,000-yard mark, the order “BATTLE SPEED” is still mandatory at that time.
- Note that all information transmissions end in OUT and those directing waves to perform a duty end in OVER. If at any time you desire a wave to acknowledge receipt of information, end the transmission with OVER, thus requiring an answer.
- Dispatched orders are not required if waves have been shifted to channel ALFA or the shift to channel ALFA upon each wave's crossing LOD is provided for in the OPORDER or prebrief.

VISUAL PROCEDURES FOR TRANSMITTING GRID POSITIONS

LEARNING OBJECTIVE: Explain procedures for visually transmitting grid positions.

Grid positions by flashing light or Nancy will normally be preceded only by flashing the wave number. However, if confusion would result from transmitting into different numbered boat lanes or different colored beach lanes, it will be necessary to modify the call accordingly. For example, to call the wave commander of Wave Three, Blue Beach Two, the normal call-up is the numeral 3. If confusion would result, and it is therefore necessary to send the complete call, the call is transmitted as numeral 3, Blue, numeral 2. The control ship, after establishing communications with the wave commander, then transmits the grid position.

The wave commander receipts for each group by flashing a *T* with his or her signal equipment and receipts for the message with the usual *R*.

Visual grid positions and information are transmitted by control ships using the procedures in the following paragraphs.

After the wave call-up, insert the group GP. This acts as a proword and alerts the receiver that a grid position is to follow.

Transmit the grid position using letter *L* for left, *C* for center, *R* for right, and *LL* or *RR* for being outside of the boat lane to the left or right, respectively. The distance from the beach is transmitted in hundreds of yards as a single or double numeral. For instance, 1 equals 100 yards; 11 equals 1,100 yards.

Transmit the letter T followed by two digits to indicate the time, in minutes, of the grid position. Given the time of the position, the wave commander knows how early or late he or she is once the position is plotted. Knowledge of grid position time is important because, depending on the proficiency of the control team, receipt of the position can be up to 2 minutes after actual time.

If necessary to order a speedup or slowdown, the group SS or TT is sent, respectively.

If necessary to order a course change, a vector in tens of degrees indicating direction left or right is sent. For instance, to vector 30 degrees to the right, the group V3R is sent. Direction of the vector should always be included, because waves are not necessarily always heading for the beach but may be under control seaward towards the rendezvous area.

The group BS BS is an order to go to BATTLE SPEED.

If needed, the group TA indicates an order to turn away.

The following are examples of grid posits sent visually:

SIGNAL	MEANING
4GPL4OT32	Wave four grid posit is in the left portion of the boat lane 4,000 yards from the beach at time 32.
2GPR32T47SS	Wave two grid posit is in the right portion of the boat lane 3,200 yards from the beach at time 47 and is to speed up.
1GPLL29T52V2R	Wave one grid posit is outside of the boat lane to the left 2,900 yards from the beach at time 52 and is ordered to vector 20 degrees to the right.
3GPC20T17TT	Wave three grid posit is in the center of the boat lane 2,000 yards from the beach at time 17 and is ordered to slow down.

Upon touchdown of the first boat/vehicle of each wave, the signal TD TD TD is sent to the control ship. Remember, its going to be very difficult at times to transmit back or receive from the control ship; you must be proficient and get the job done. Visual communication is a very important part of an amphibious assault, so be prepared to do your best.

QUIET LANDING PROCEDURE

LEARNING OBJECTIVE: Explain the method of control for quiet landing, including visual signals, radio circuit, and manning requirements.

Visual signaling (flashing light, flaghoist, and/or semaphore) will be used as the primary means of controlling the movement of surface craft during the initial assault portion of a quiet landing. Radio circuits normally used in controlling the ship-to-shore movement should be checked out before the assault, subject to emission control (EMCON) policy. These radio circuits should be guarded and should be used only when all other means of communicating with surface assault waves have failed and when it is necessary to correct or alter the movement of an assault wave.

It is imperative that experienced Signalmen be embarked in control boating. They must watch the control ship constantly and must be capable of receiving at the rate of eight words per minute. Since embarked craft (LCUs and LCMs) do not normally include Signalmen in deploying boat crews, host ships should ensure that a Signalsman is assigned to embarked craft for assault operations.

PCS will transmit a vector and speed signal to each wave at 1-minute intervals once the wave has been dispatched from the LOD. The signal will be in three parts: wave identification, vector, and speed. Identification of the wave is signaled by the corresponding numeral. Vector direction is indicated by flashing ROMEO for right and LIMA for left. The amount of vector is indicated by the multiple letters, each representing 10°; for example, R indicates vector right 10°, and RRR indicates to vector right 30°. If vectoring is not necessary, the letter CHARLIE is signaled. Speed orders will be signaled by numerals indicating

speed desired. For example, 7 indicates 7 knots. BS is indicated by repeating the letter BRAVO three times. Examples of quiet landing signals follow:

SIGNAL	MEANING
3RR5	Wave three, vector right 20°; make 5 knots
5C5	Wave five, maintain course; make 5 knots
2L3	Wave two, vector left 10°; make 3 knots
1CBBB	Wave one, maintain course; make battle speed

AFLOAT SALVAGE OPERATIONS

LEARNING OBJECTIVE: Explain the purpose of the afloat salvage operation and the craft involved in the operation.

During a ship-to-shore surface assault on a hostile beach, a certain number of casualties among the assault craft are inevitable. The mission of the salvage organization is to keep boat lanes and beachheads clear of disabled assault craft so that movement to the beach is maintained.

CRAFT INVOLVED IN SALVAGE OPERATIONS

A heavy salvage boat is normally an LCM converted as stated in BOATALT 19C, dated 05/10/63, and is stationed outside the surf zone but close enough

to maintain good visibility of the beach and its approaches.

A light salvage boat is normally an LCPL and is stationed seaward of the surf zone along the boat lanes as required.

Salvage teams should consist of personnel from one ship trained as a team to maintain consistency. Personnel for salvage teams should be assigned as shown in figure 12-15.

NOTE

One team member must be a qualified search and rescue (SAR) swimmer.

The boat equipage for the heavy salvage and the ABGC/light salvage boats is detailed in NWP 22-3.

DISPATCHING VESSELS

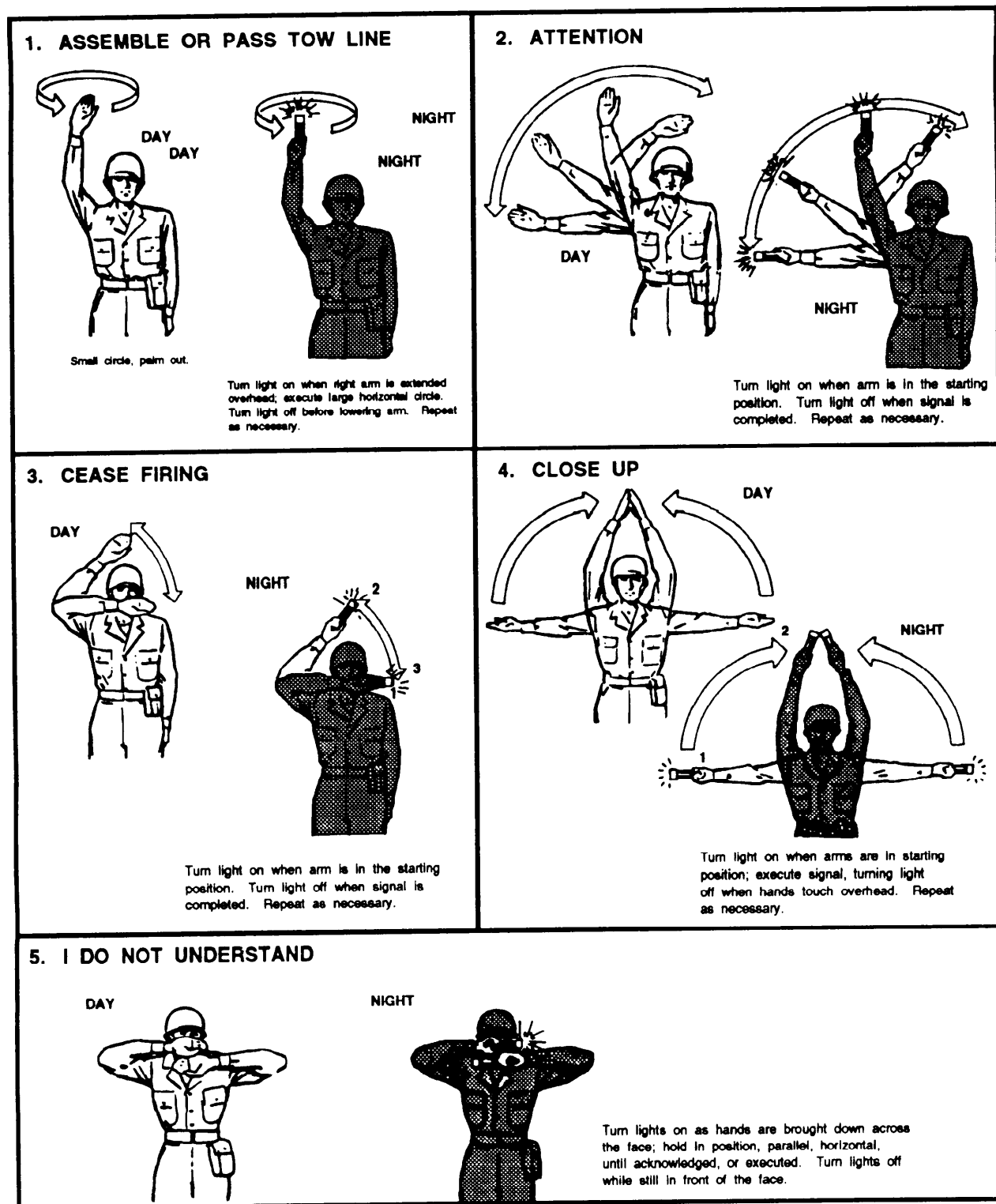
The visual signals used to dispatch the boat waves from the LOD are displayed by both the primary and secondary control vessels. Every wave commander has a radio in the boat, and the foregoing signals are paralleled by radio signals.

Wave commanders control their boats by means of hand signals, as shown in figure 12-16.

At night, lighted wands or flashlights are used. The positions are the same as for the day signals. Lights are turned on when the hands are in the starting positions and turned off when the signals have been

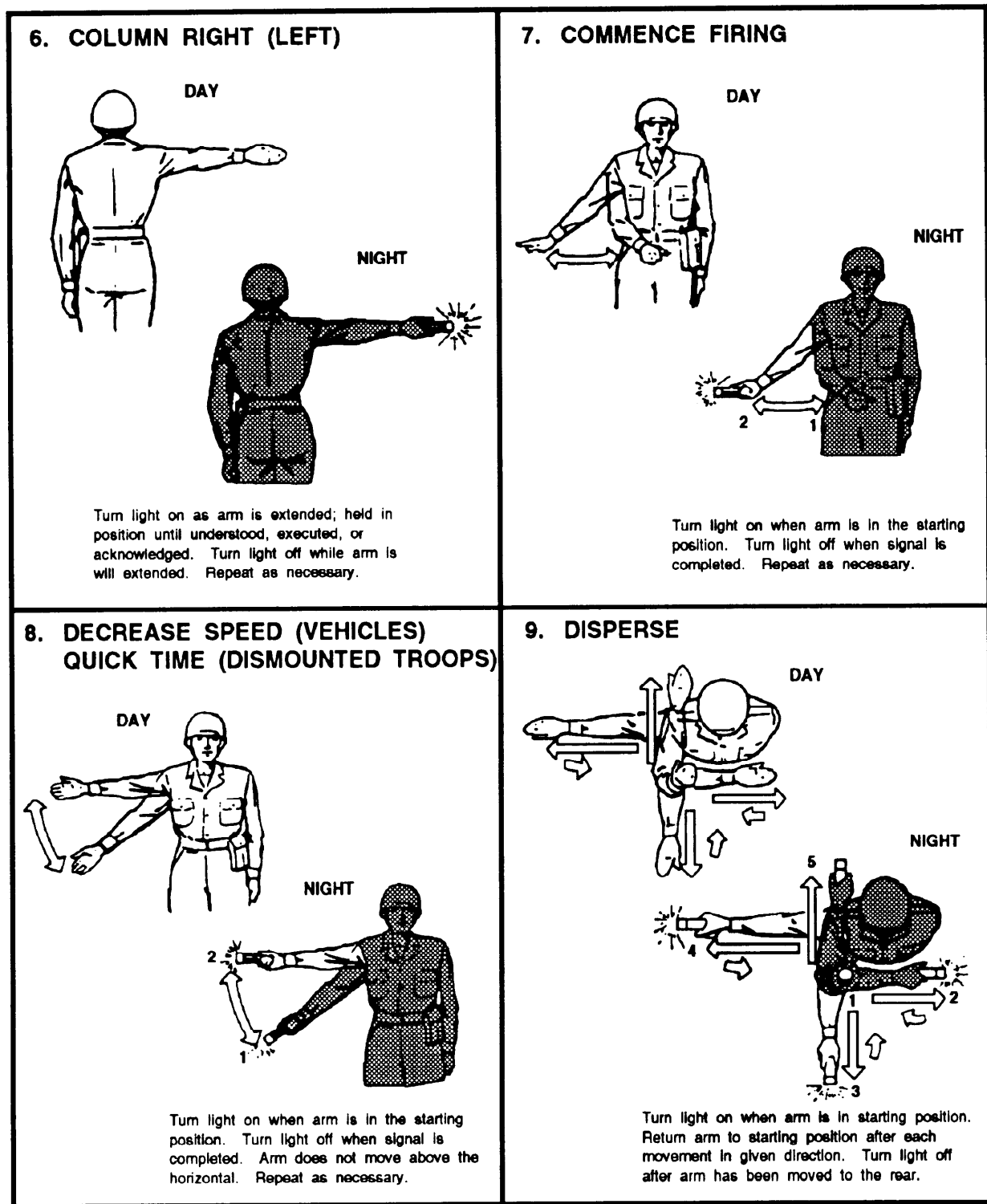
HEAVY SALVAGE BOAT	LIGHT SALVAGE BOAT
1 - Salvage officer	1 - BM2/BM3 (salvage rigger)
1 - BMC/BM1 (salvage rigger)	1 - SM3/SMSN
1 - EN1/EN2	1 - HT2/HT3
1 - HT2/HT3	1 - RM3/RMSN
1 - RM3/RMSN	1 - SN
1 - SM3/SMSN	
1 - HM3/HMSN	
1 - SN	

Figure 12-15.—Salvage team personnel.



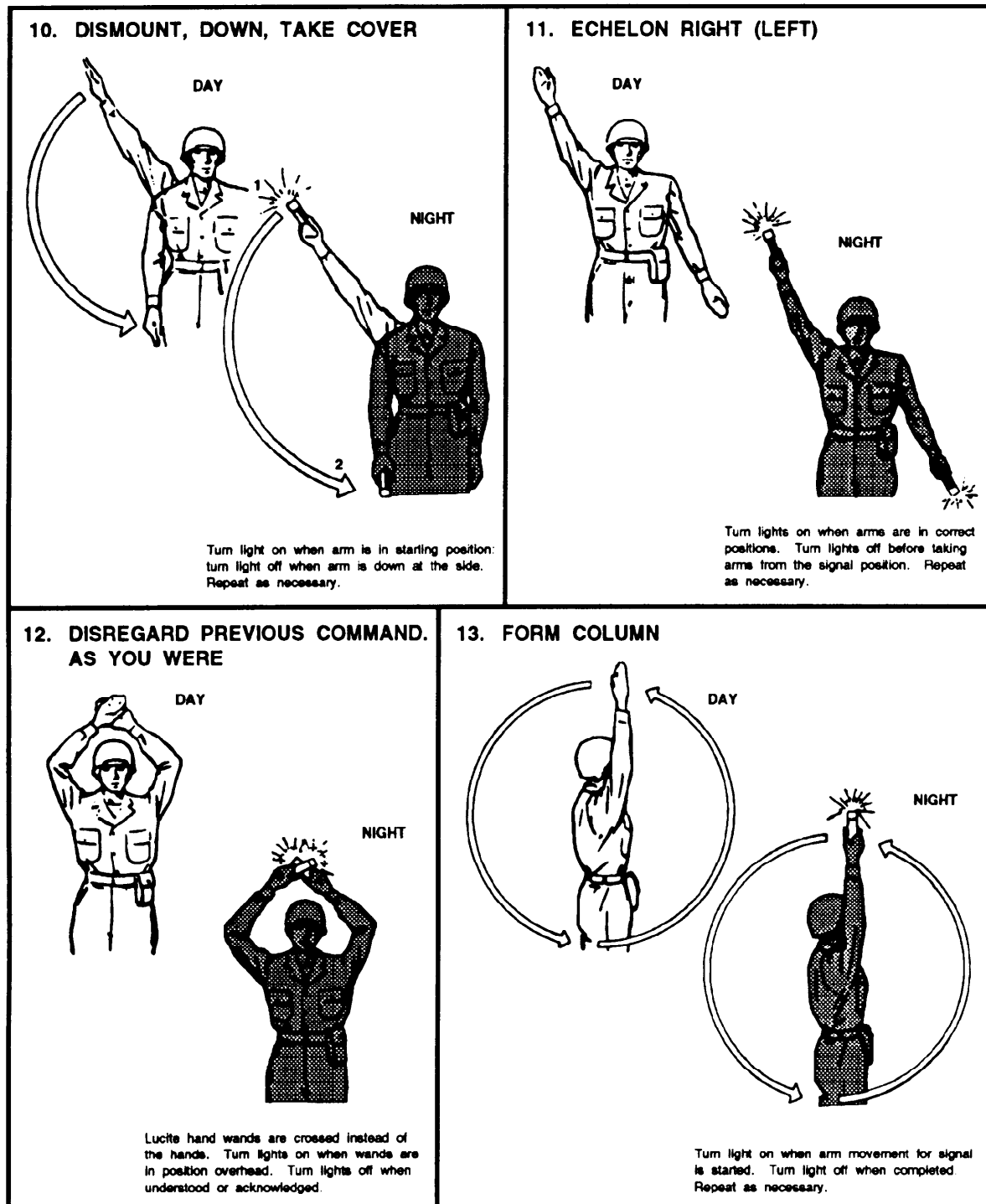
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Figure 12-16.—Arm and hand control signals—landing craft and amphibious vehicles.



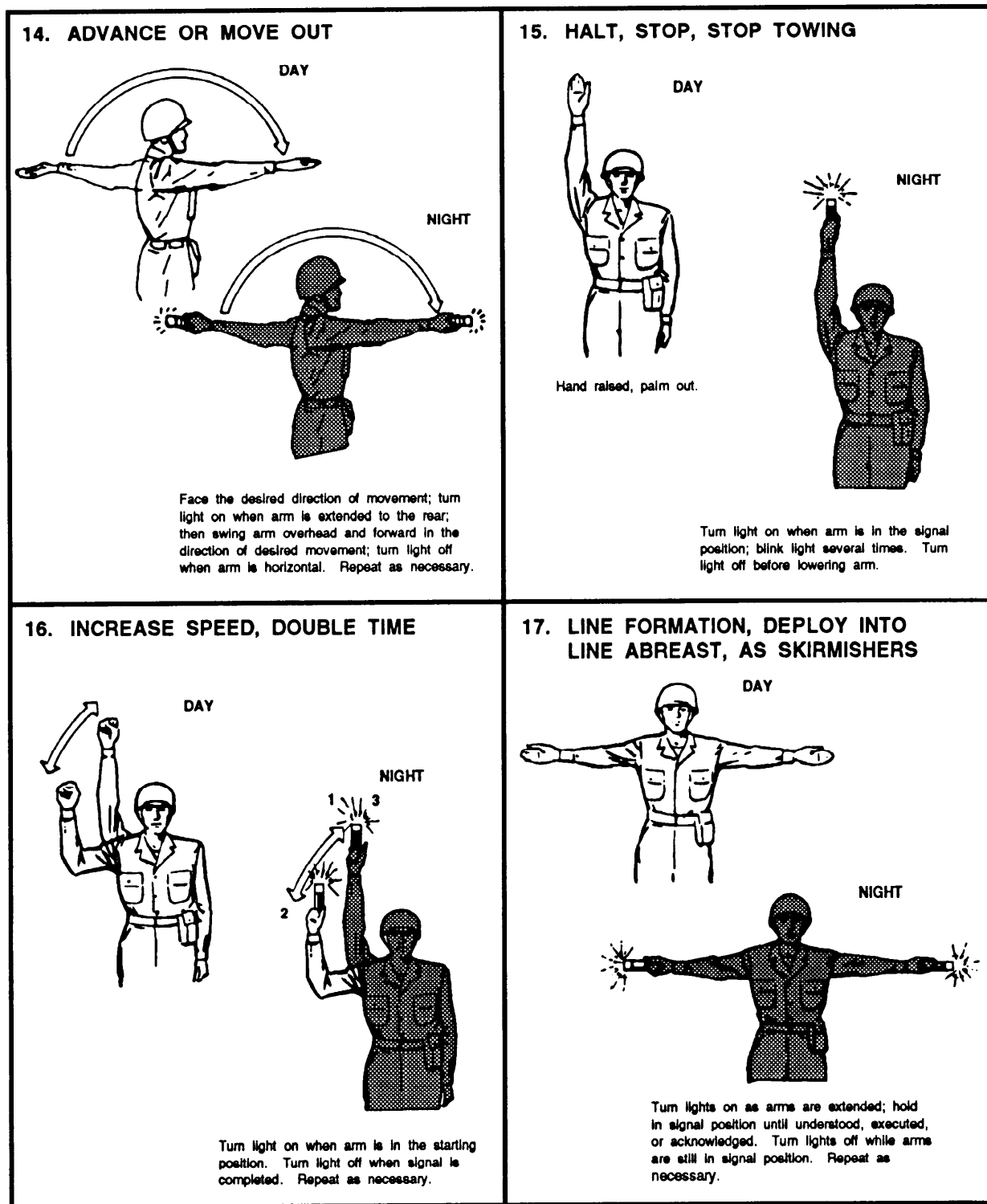
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Figure 12-16.—Arm and hand control signals—landing craft and amphibious vehicles—Continued.



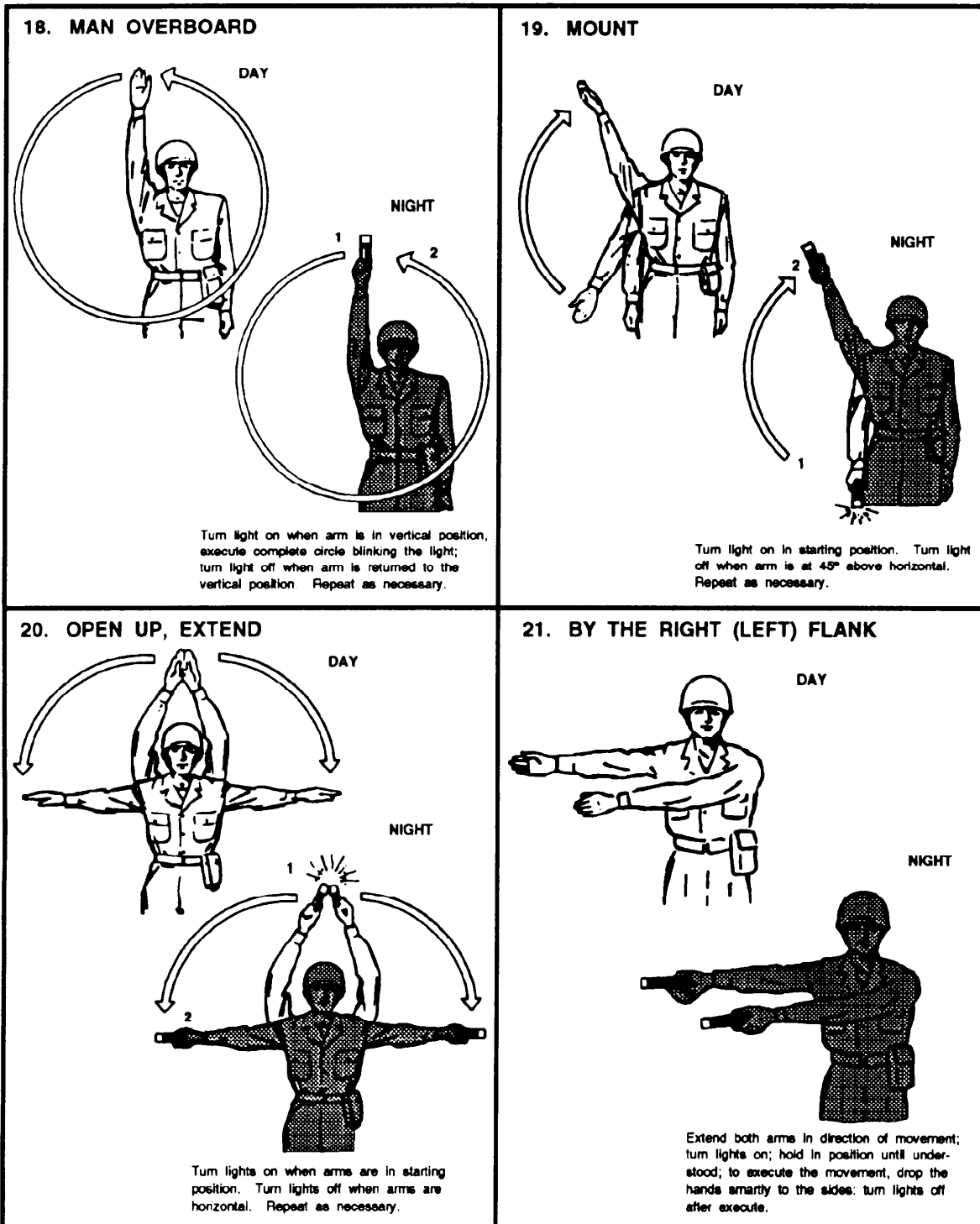
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Figure 12-16.—Arm and hand control signals—landing craft and amphibious vehicles—Continued.



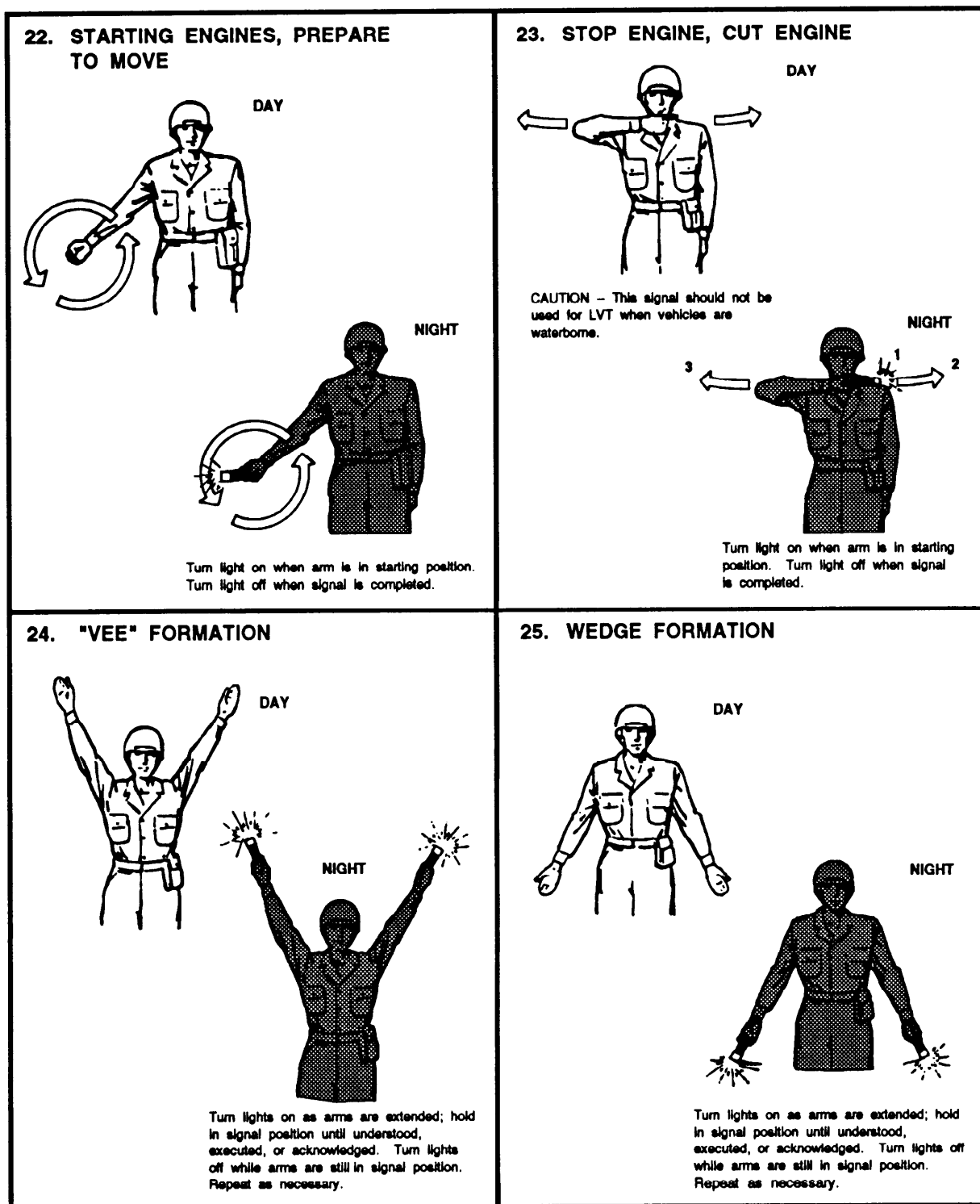
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Figure 12-16.—Arm and hand control signals—landing craft and amphibious vehicles—Continued.



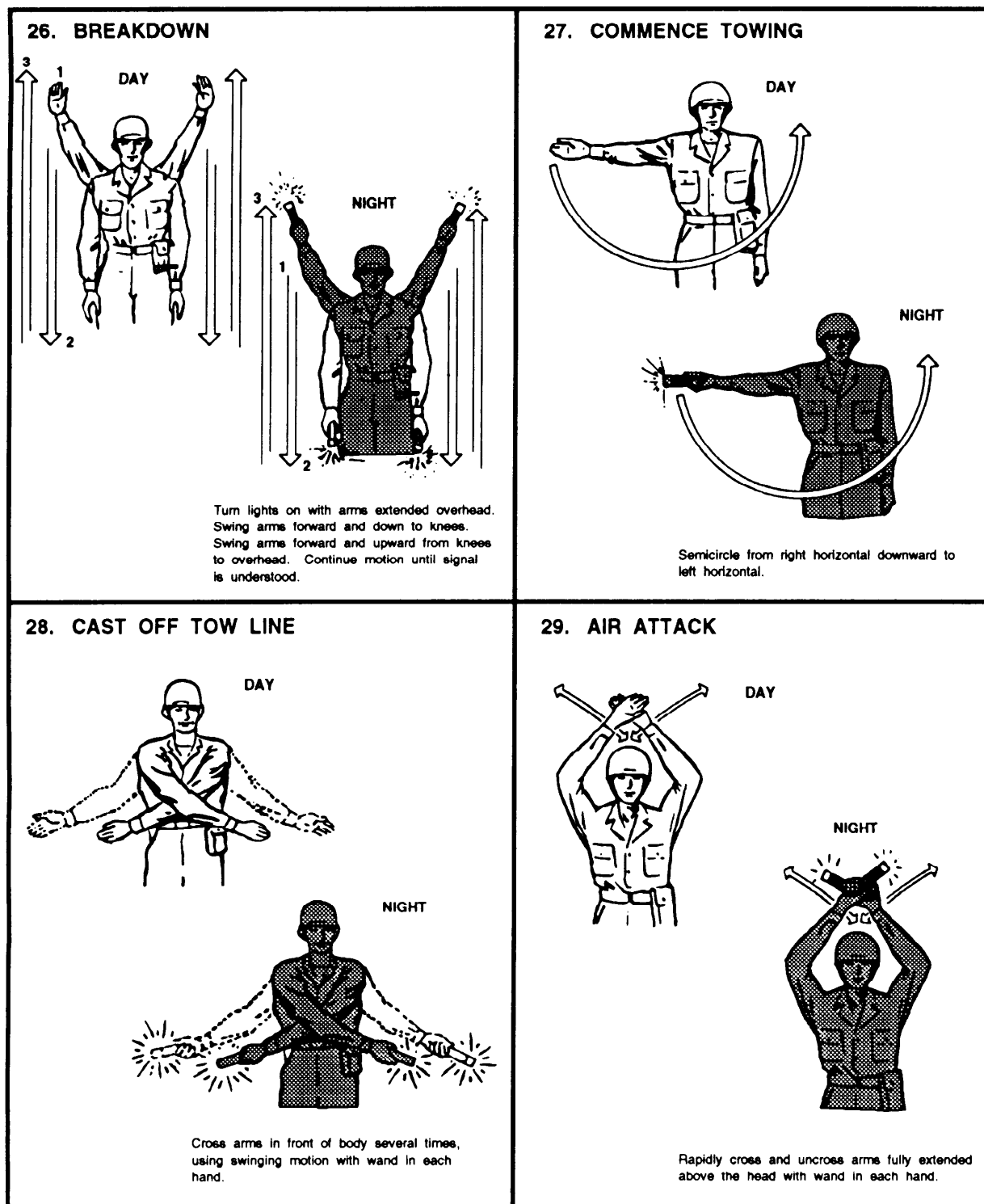
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Figure 12-16.—Arm and band control signals—landing craft and amphibious vehicles—Continued.



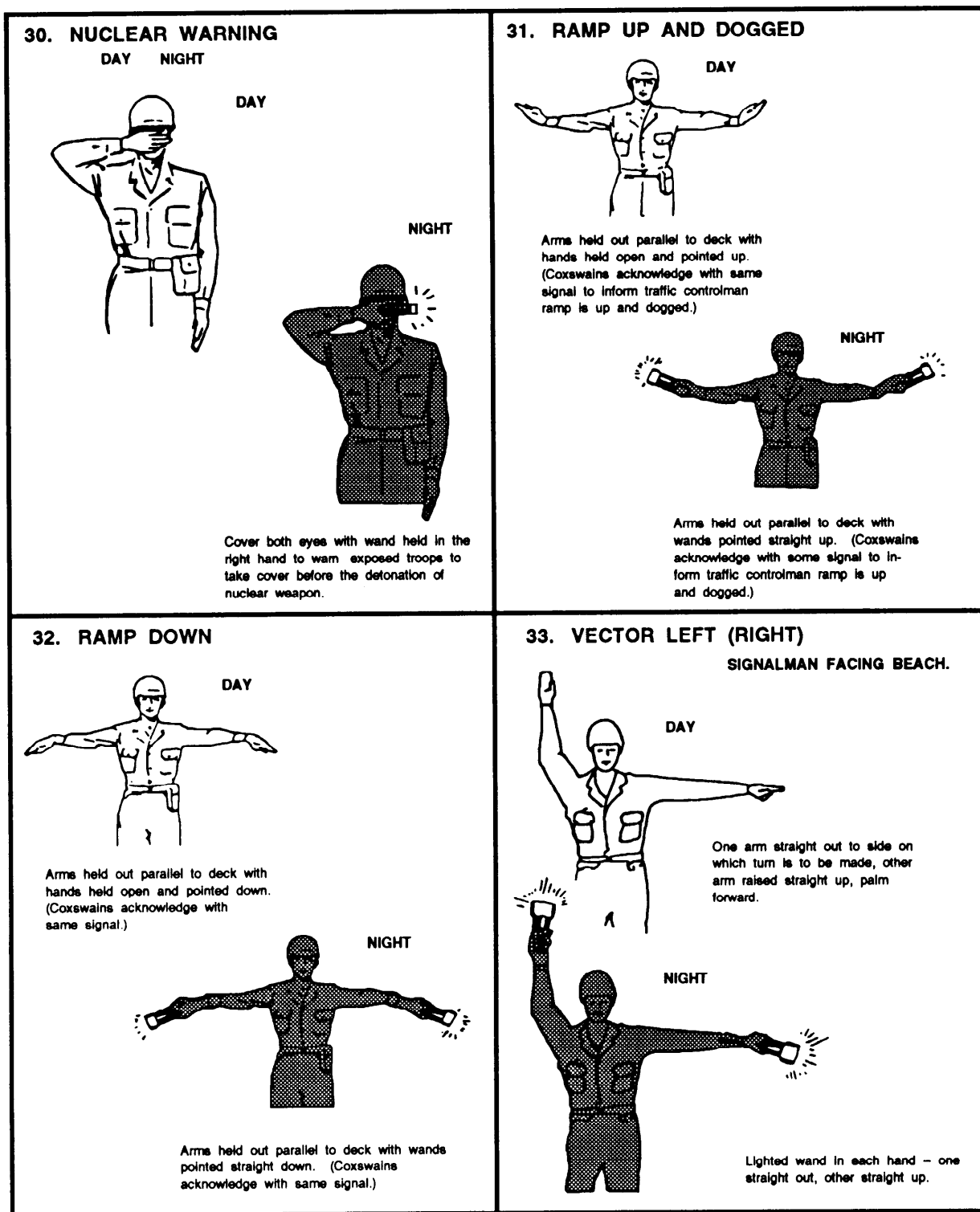
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Figure 12-16.—Arm and hand control signals—landing craft and amphibious vehicles—Continued.



73NP0096

Figure 12-16.—Arm and hand control signals—landing craft and amphibious vehicles—Continued.



73NP0097

Figure 12-16.—Arm and hand control signals—landing craft and amphibious vehicles—Continued.

completed. At the end of start and stop signals the light is blinked several times. Night signals are repeated as necessary. The formations used are illustrated in figure 12-17. Assault boat coxswains should know all of these signals and formations. Those signals concerning starting, stopping, breakdown, towing, and so on, might also prove useful to any coxswain in the event of an emergency.

The naval beach party is landed early in the assault. When they reach the beach, they proceed with their duties of marking channels and hazards to navigation, establishing communications, improving beaches, and so forth.

After a boat unloads on orders from the beach party, it retracts past the surf line and proceeds to a designated flank of the boat lane. Keeping clear of the boat lane, it proceeds to seaward and reports to the control vessel for further orders.

GENERAL UNLOADING PHASE

During the general unloading phase, loaded boats do not maintain a formation on the trip to the beach, although several of them may be required to move as a unit. On the way to the beach they must stop for orders at the PCS and the BGC's boat.

The type of cargo in a boat is indicated by the color of special flags flown. Red denotes bulk cargo, which needs manpower for unloading; yellow shows the load is such that a prime mover is required; blue denotes self-propelled cargo; and a red burgee shows the boat is a bowser (fuel) boat. A green flag shows a boat belongs to a floating dump, and a numeral flag may be flown under it to indicate the type of cargo carried.

SUMMARY

In this chapter, you have learned the general concept of an amphibious operation and the different

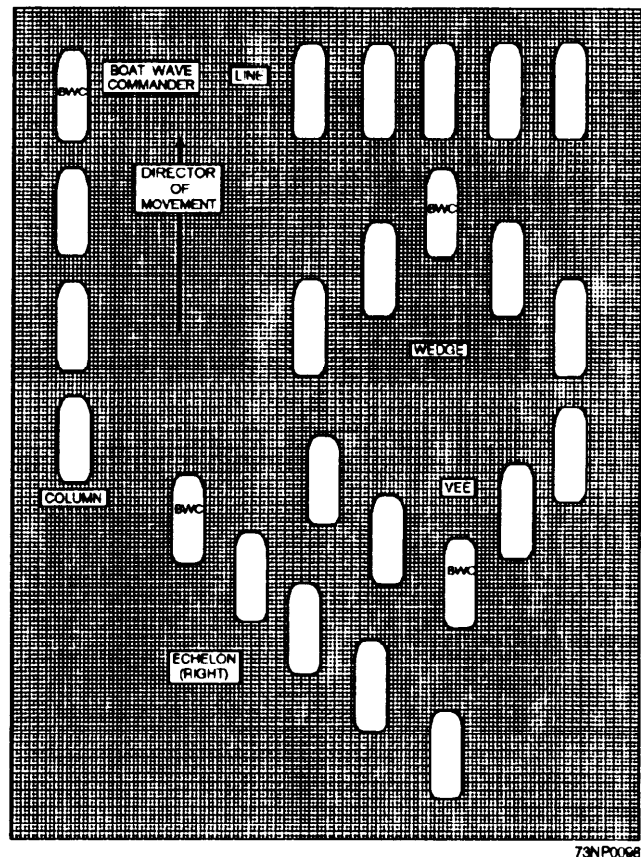


Figure 12-17.—Boat formations.

ships, boats, and landing craft involved. You have learned about standard flags and markers, control areas, and debarkations. You also have learned to transmit grid position both by radio and visually and the procedures for dispatching waves to the LOD during daylight and nighttime. You have learned the duties of the different personnel associated with an amphibious landing. Although this chapter has a lot of information to learn about amphibious landings, your best source of information is NWP 22-3.